5527

Walk Around

A-1 Skyraider

Don Greer

Walk Around Number 27

squadron/signal publications

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By Ed Barthelmes and Richard S. Dann
Color by Don Greer and Richard S. Dann

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Introduction

The Douglas **AD** (**A-1** from 18 September 1962) **Skyraider** – unquestionably the most versatile single engine propeller driven aircraft ever manufactured – performed in many roles for over 35 years. Conceived 'overnight' in a Washington, DC hotel room, the Skyraider first flew just nine months and two days later on 18 March 1945. The versatility and adaptability of the Skyraider design was evident in the 33 sub-variants, which evolved during the Skyraider's lifetime. The simple design approach taken by designer Ed Heinemann on the Skyraider established many of the principles used to design modern attack aircraft. The Skyraider's rugged structure and dependability allowed it to keep flying after sustaining severe damage. These qualities established new standards by which future aircraft designs would be measured. The versatility of the Skyraider was ultimately proven in the Vietnam Conflict when A-1s shot down multiple MiG jet fighter aircraft and served as the weapons platform of a Medal of Honor mission. The aircraft's proven reliability earned it such respectful nicknames as 'SPAD,' 'Flying Dump Truck,' 'Able Dog,' and 'Workhorse of the Fleet' among those who flew and serviced this venerable aircraft.

All Skyraider variants shared common wing geometry and horizontal control surfaces; however, there were many differences between the variants. Sometimes the only differences were internal changes that were not externally noticeable. The most noticeable difference was between the single place and multi-place cockpit airframes. The latter aircraft featured substantial modifications to the fuselage profile and vertical control surfaces. In the scope of this Walk Around, we have merely scratched the surface of documenting all the 33 different Skyraider sub-variants; however, we have illustrated the major details of the most prolific variants of this family.

Acknowledgements:

We would like to thank all those involved with this project:

Jerry Foster
Steve Milliken
Pat McGinnis
Marty Bunch
Ashley Dann
Clan Ceili
Roger Besecker
Geoffery Hayes
Robert Chad LeBeau
Paul Rhodes
Dave Morris
Pima County Air Museum, Tucson, Arizona
Fleet Air Arm Museum, Yeovilton, England
Jan Jacobs
Douglas Aircraft
Walter Knouse
Dick Lieberman
Jack Brostek
Rich Alexander
Tom Brewer
Leo Kohn
Paul Ludwig
George Sanders
Jan Keohane
Jan Churchill
Tailhook Association
Dale Caldell
Allison Dann
Boeing Historical Archives, Seattle, Washington
Doris Hargis
Hal Andrews
Gene Chuddy
Richard Lawrence
Lionel Paul
Stef Wrobel
National Archives, Washington
Detail & Scale/Bert Kinzey
Irene Ishchenko
My Nam Le
Wayne Mutza

From Ed: My wife Judy and family; Matt, Sarah, and Emily for their continued support.

(Previous Page) This AD-7 (N-508, Bureau of Aeronautics Number 142020) was assigned to Attack Squadron 95 (VA-95) aboard the USS ORISKANY (CV-34) during 1956. All aircraft in Carrier Air Group 9 (CVG-9) carried the stylized '9 Ball' insignia on the fuselage. Each squadron in the Air Group used its squadron color for the '9 Ball.' (Tailhook Assn.)

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ISBN 0-89747-429-5

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(Front Cover) An A-1H Skyraider (57-134517) assigned to the 602nd Special Operations Squadron (SOS), 56th Special Operations Wing (SOW), flies low over Southeast Asia during the late 1960s. The aircraft operated from Nakhon Phanom Royal Thai Air Base (RTAB), Thailand from 1968 until 1970. This A-1H was armed with two 750 lb (340.2 KG) bombs, two rocket pods, and ten 500 lb (226.8 KG) bombs under the wings.

(Back Cover) This A-1H (NF-504, BuNo 137612) of VA-115 wore 'footprints' from one wingtip to the other during this Squadron's deployment aboard the aircraft carrier USS HANCOCK (CVA-19) in the mid-1960s. The pilot's name, LCDR Jack Jones, was painted on the fuselage side. The Skyraider began folding its wings soon after recovering aboard the HANCOCK.

The first XBT2D-1 Dauntless II (BuNo 09085) – later renamed AD-1 Skyraider – is parked on the Douglas ramp on 26 March 1945, eight days after its first flight. The Curtiss Electric propeller fitted to this aircraft had the domed hub soon deleted from production Skyraiders. This XBT2D-1 also had the main landing gear doors, which were not standard until the AD-2. A 2000 lb (907.2 KG) bomb was mounted on the centerline rack, and a spin recovery parachute was installed at the rudder's base. (Gann/McDonnell Douglas)

XBT2D-1 (BuNo 09088) was fitted with a large spinner over the propeller hub. Both the spinner and the forward cowling were painted red. This aircraft had the early style tail wheel and the lack of a notch at the base of the rudder. The intermediate cowling on both the XBT2D-1s and AD-1s was considerably different than the cowling of later models. The XBT2D-1s also featured a circular wheel well with no doors, which later appeared in the AD-5. (Boeing Historical Archives)

This XBT2D-1 (BuNo 09086) was the second of 25 Dauntless IIs initially ordered in July of 1944. It was equipped with a domed and cuffed Curtiss Electric propeller. XBT2D-1s carried only two 20MM M3 cannon mounted in the wings just inboard of the wing fold. The first few XBT2Ds were equipped with F4U Corsair main landing gears to expedite the development program. (Boeing Historical Archives)

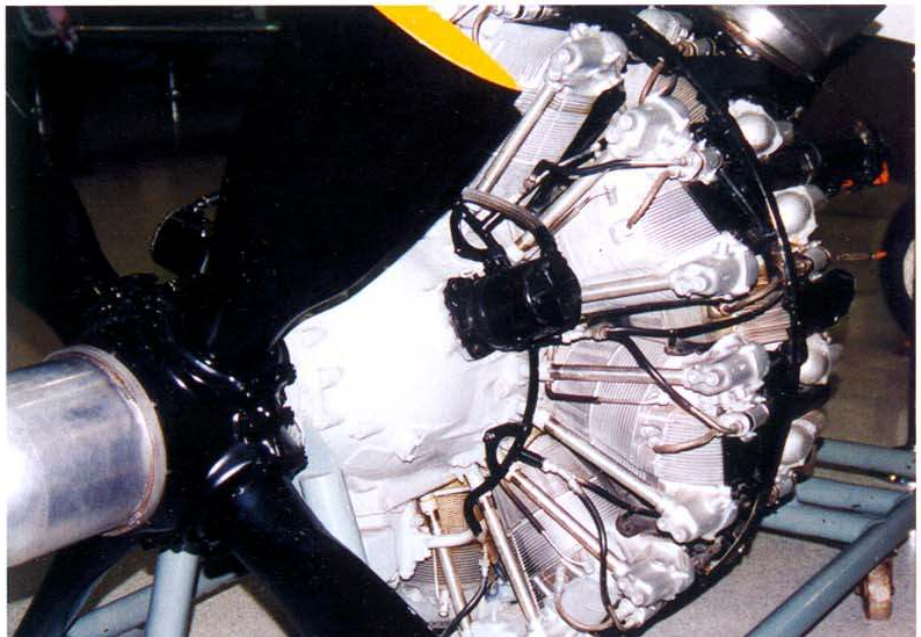
This standard AD-1 (BuNo 09121) was painted overall Glossy Sea Blue (FS15042). A single 20MM M3 cannon was installed in each wing. The aircraft carries a AN/APS-4 radar on the port inboard weapons pylon. AD-1s and -2s lacked the 'notch' at the bottom of the rudder, which was introduced on the AD-3. This 'notch' provided added clearance for the tailhook in its retracted position. The position light – red to port and green to starboard – was faired in to the wing leading edge. (Douglas)

Three AD-1s of VA-1B fly near the Italian coast during the Mediterranean cruise of the USS MIDWAY (CVB-41) in 1947-48. The B suffix in the Squadron's designation indicated assignment to a MIDWAY Class battle carrier. The term Battle Carrier (CVB) was later replaced by Attack Carrier (CVA). The 242 AD-1s built were armed with two 20MM cannons – one in each stub wing – and fitted with 15 hard points for ordnance. The AD-1 entered US Navy squadron service by the spring of 1947. (Walter Knouse)

A Marine AD-2 assigned to Marine Attack Squadron 121 (VMA-121) is parked on an airfield in Korea during the Korean War. MY LOIS was painted in white near the windshield. The Skyraider was fitted with 150 gallon (567.8 L) fuel tanks on the inboard wing pylons and six 250 pound (113.4 KG) bombs under each wing.

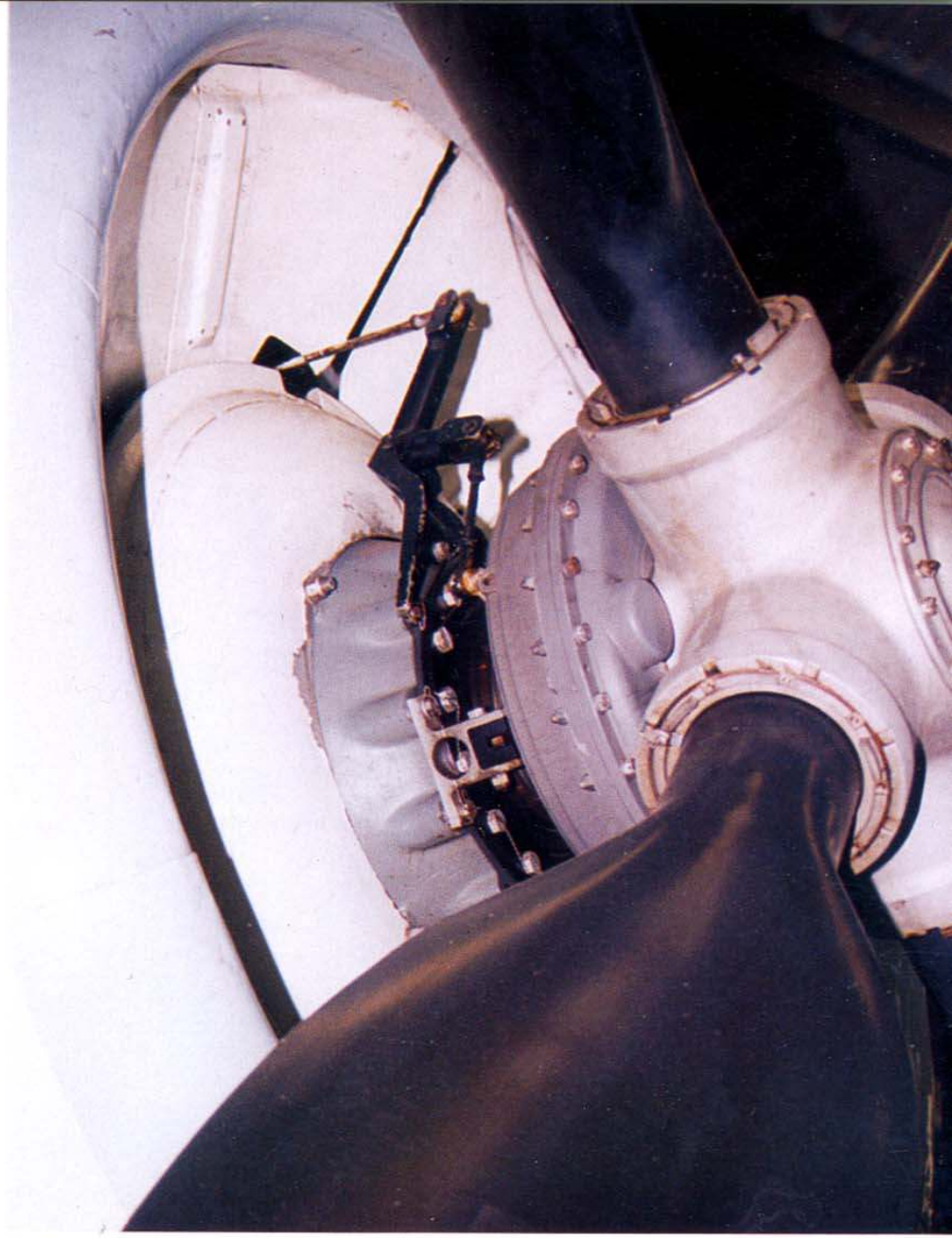
Attack Squadron 145 (VA-145) pilots walk to their Skyraiders on the flight deck of the aircraft carrier USS HORNET (CVA-12) during 1957. Most of the ADs were repainted Light Gull Gray (FS36440) over Gloss White (FS17875) from mid-1955; however, the last AD-5 in the row retained its Glossy Sea Blue finish. An FJ-3 Fury and an AJ-2 Savage were spotted ahead and to starboard of the ADs. (Ludwig)

Skyraiders were powered by the Wright R-3350 series of air-cooled radial engines. The 18 cylinders were arranged in two rows of nine cylinders each. Two magnetos placed ahead of the front cylinder row provided electrical power to the spark plugs. Each engine cylinder was fitted with two spark plugs connected to the magnetos for igniting the fuel within the cylinder. (Dann)

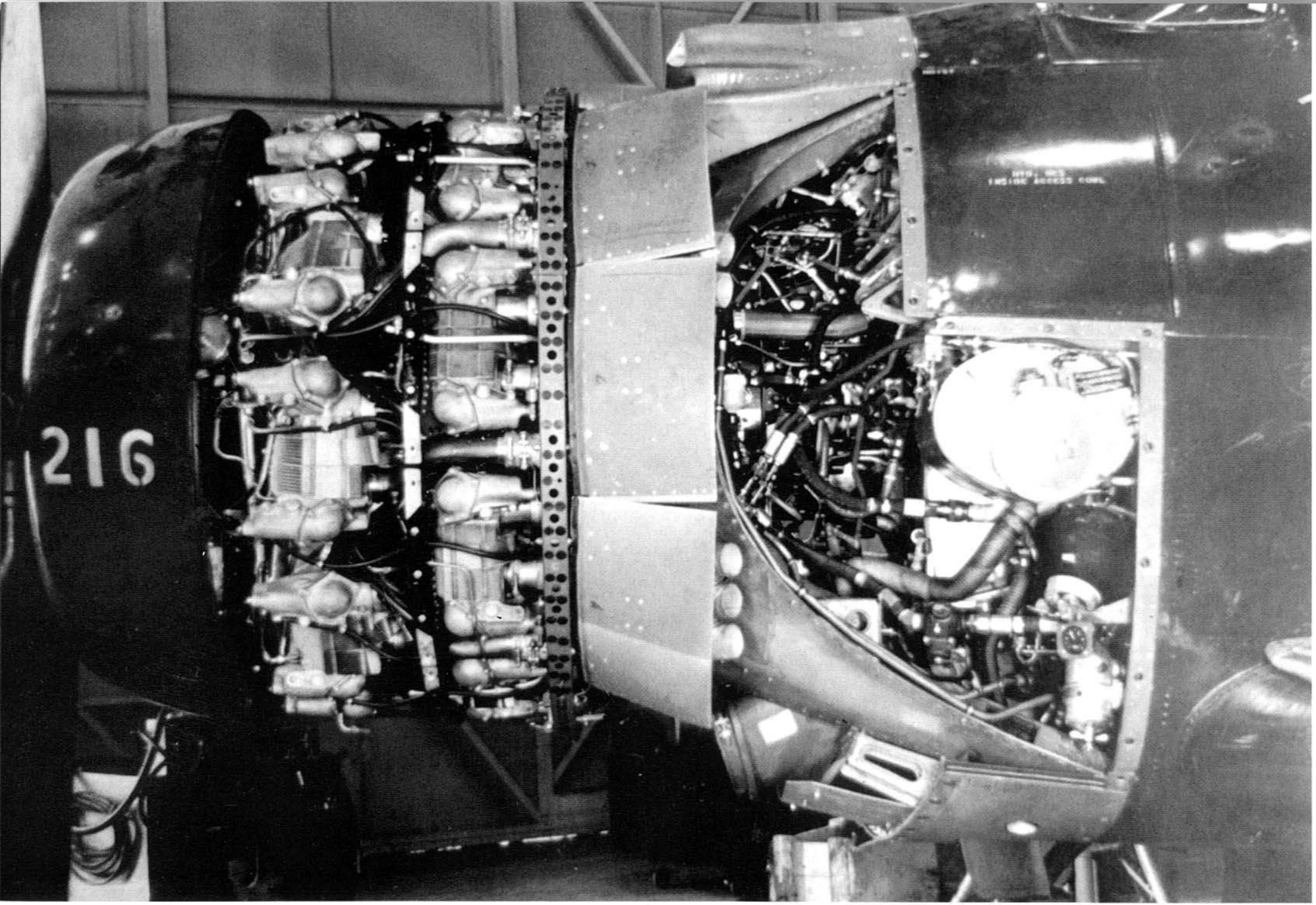


This AD-1 and other early Skyraiders had fully exposed engines, without the nose cowl flaps introduced on the later AD-4. The engine magnetos were placed at the 10 o'clock and 2 o'clock positions on the engine, while the oil sump was located at the 6 o'clock position. (Barthelmes)

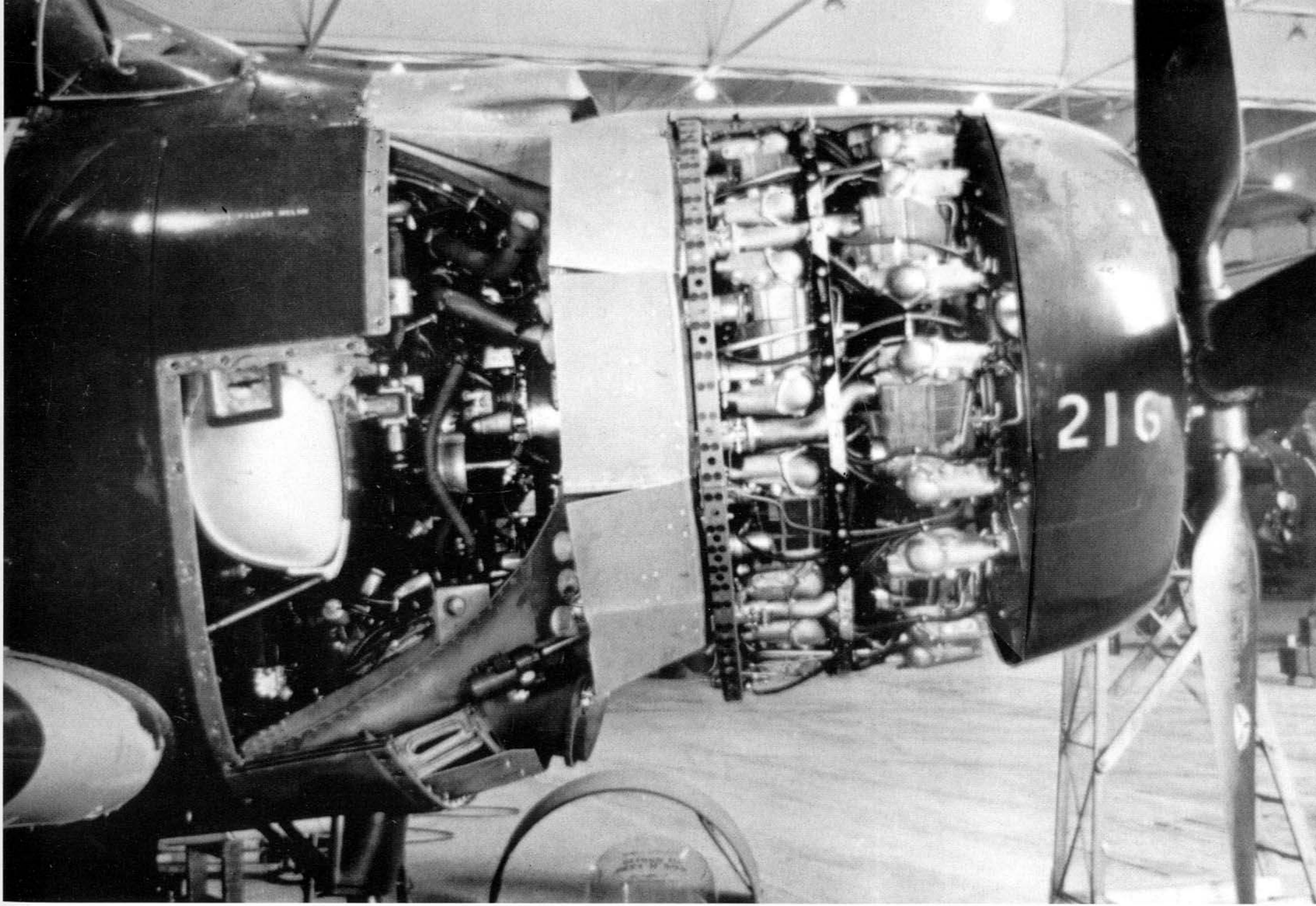
The propeller was removed from this AD-4N (BuNo 126882/NX91945), whose wings were folded. Two of the six nose flaps were placed in the upper inside cowl surface. These flaps worked in conjunction with the cowl flaps to reduce cooling air to the engine during cold weather operations. Pushrods extended from the engine crankcase to the tops of each cylinder.



The nose flaps were closed on this AD-4 using the cowl flap switch in the cockpit. This switch operated the nose and cowl flaps simultaneously. The bellcrank mounted above and slightly aft of the propeller hub was connected to the propeller governor control linkage. This linkage went above the engine crankcase and connected to the propeller governor, which assured the propeller's constant speed regardless of the aircraft's speed. (Barthelmes)



Removal of the port cowling and engine accessory panels reveals the 2700 horsepower (HP) Wright R-3350-26W engine of this AD-2. Electrical wiring and hoses for various liquids were bundled aft of the cowl flaps. The scoop above and aft of the cowl flaps was the air intake for the engine's carburetor. Below and aft of the cowl flaps was the oil cooler, which served as a radiator to cool the oil coming from the engine back to the oil tank. The 38.5 gallon (145.7 L) oil tank reservoir was an oval-shaped aluminum object at the aft end of the engine accessories. The main engine oil supply line led down from the reservoir, ahead of the fuel system pressure gauge. (Douglas)



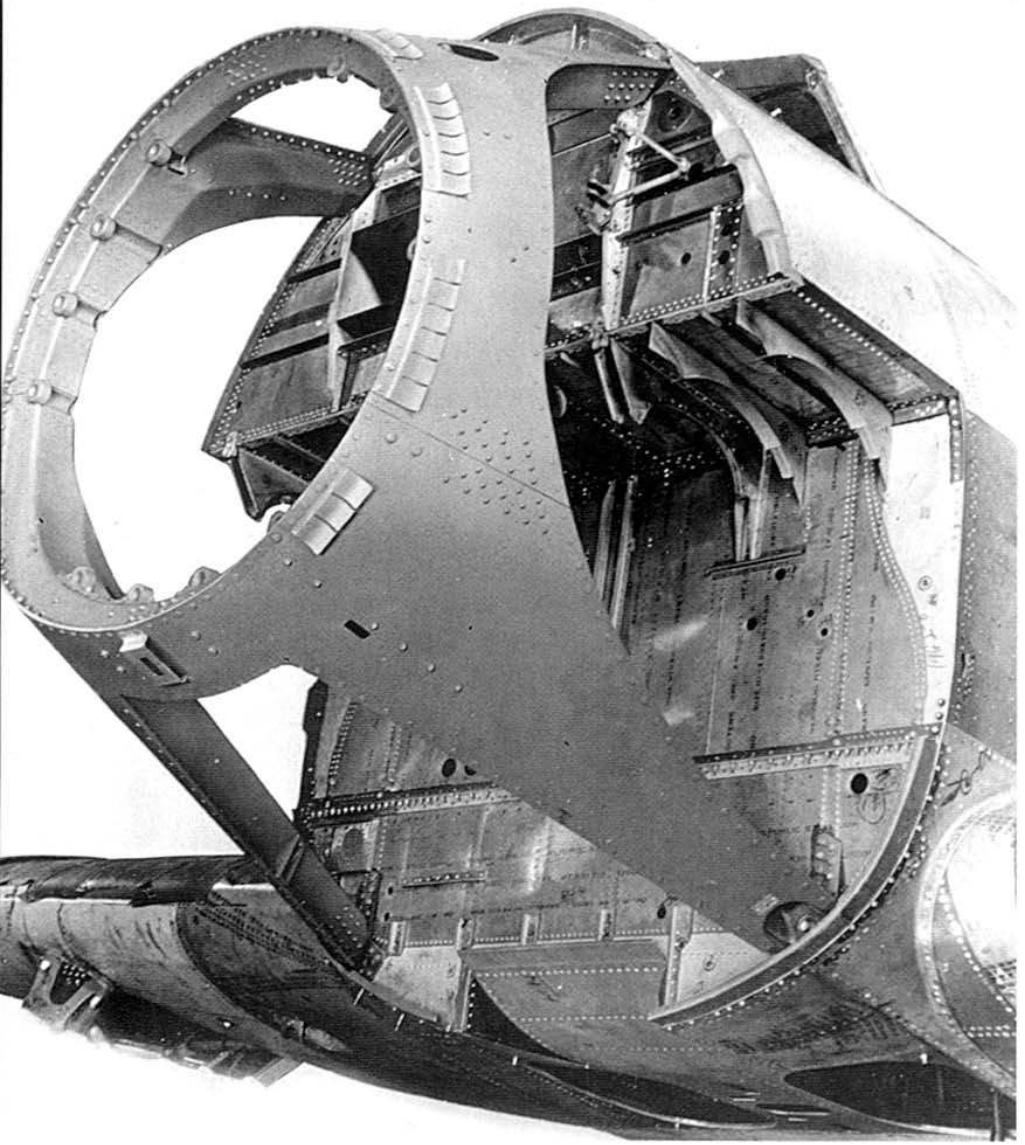
This same AD-2 had the engine accessory and cowling panels removed from the starboard side. The 38.5 gallon oil tank was placed in the engine accessory section, located aft of the engine. The square recess on the tank's upper edge held the filler neck for this receptacle. The lower engine mount support strut was placed between the oil tank and the oil cooler intake. Baffling between the engine cylinders directed cooling air around the cylinders to provide optimum engine cooling. Most of this Skyraider's exterior surfaces were painted Glossy Sea Blue, although the carburetor intake and the cowl flaps on this aircraft were left in natural metal. (Douglas)

XBT2D-1s and AD-1s had a bleed air outlet placed immediately aft of the cowl flaps and just above the upper group of three engine exhaust stacks. This outlet allowed excess air from the upper fuselage carburetor scoop to escape from the engine accessory area. Skyraiders had three cowl flaps per side, which operated with the nose flaps in regulating the amount of cooling air inside the cowling. The 'key-hole' marking above the wing's leading edge was used for mounting the engine maintenance platform. (Barthelmes)

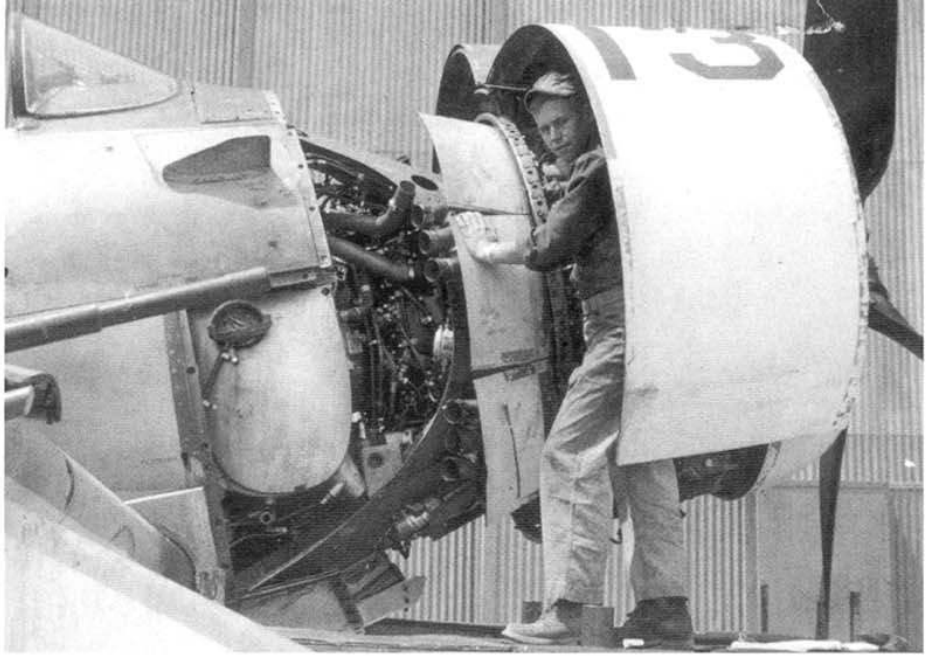
Early Skyraiders (XBT2D-1s and AD-1s) had exhaust pipes in three groups of two stacks each placed on each side of the forward fuselage. Skin reinforcements were riveted to the fuselage surface parallel with the cowl flaps. The cowl flap actuator between the groups of exhaust pipes extended or retracted the flap according to the pilot's command. This actuator was removed from the lower flap, leaving the mounting bracket on the skin. (Barthelmes)

The AD-2 and subsequent Skyraider variants featured a revised forward fuselage section immediately aft of the cowling. The groups of engine exhaust stacks were separated by aerodynamically-shaped fairings. Access to the R-3350 engine was accomplished by releasing latches located at the cowl's bottom. Both cowling sides swung up on a hinge at the top. (Dann)

Skyraider variants from the AD-2 onward had six exhaust stacks – two pairs of three stacks each – on the starboard side. The aircraft's port side had two exhaust stacks in the upper cluster and three stacks at the bottom. Exhaust pipes were made of steel, which had turned brown due to the exhaust gasses' heat. The area immediately aft of the exhausts was clean on this displayed aircraft. Exhaust soot normally was found aft of the exhaust stacks of operational Skyraiders. (Dann)

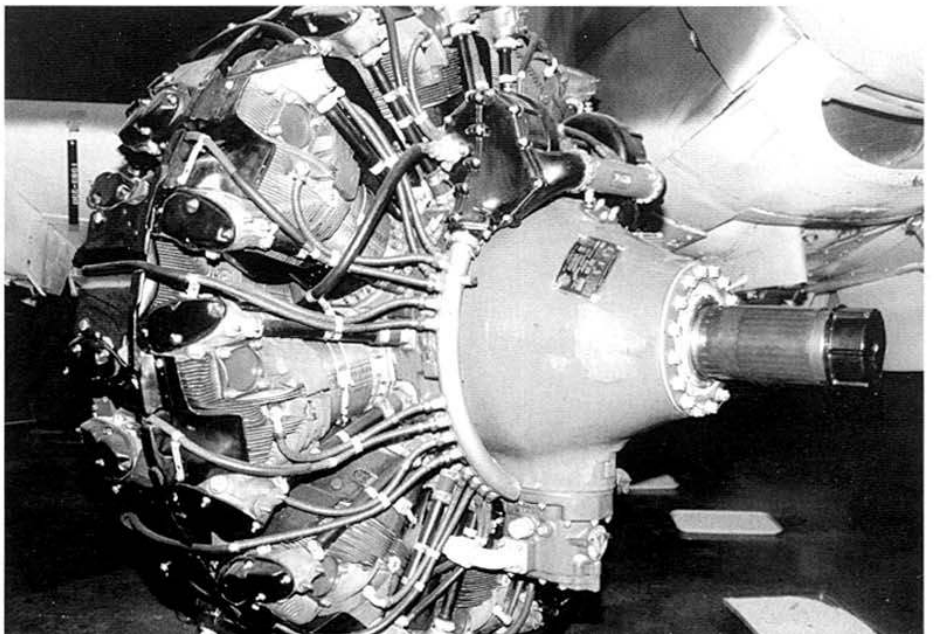


The engine mount was secured to the Skyraider's forward fuselage at the ends of its four arms. The top portion of the engine mount was attached at bulkhead 78 and the lower arms attached at bulkhead 96. The mount's unique monocoque construction – lacking an interior structure – could distribute the engine loads uniformly and maintain the normal contour of the mount under all flight conditions. Support brackets for the oil tank were fitted to the lower bulkhead. (Douglas)



Maintenance personnel have opened the hinged cowling of this VMA-332 AD-6 to obtain access to the engine. Support rods were placed inside the cowling halves to keep them open. The forward fuselage access panels were removed to reveal the oil tank, the engine mount arms, and the exhaust stacks. (Jack Brostek)

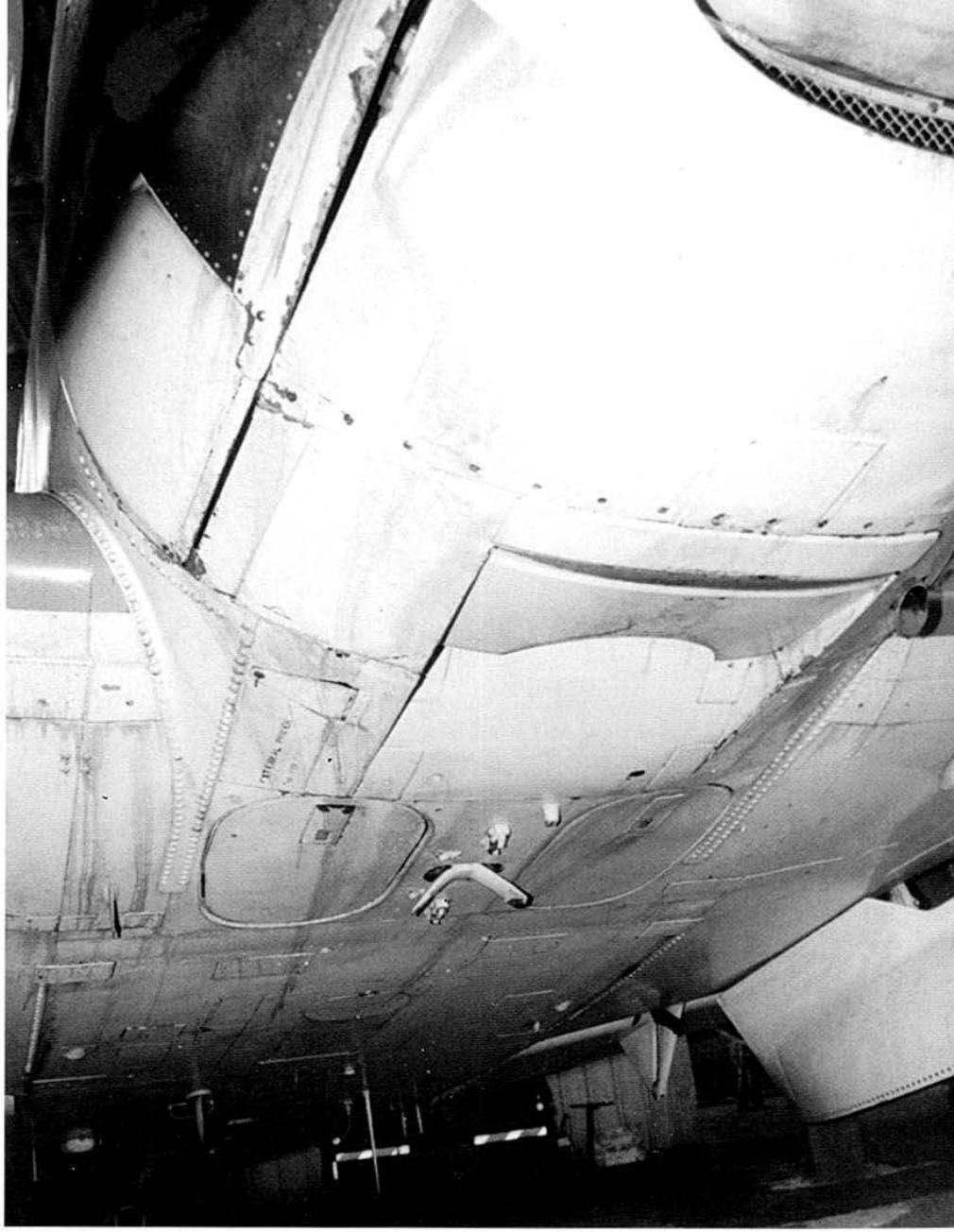
Dual magnetos are located at the 11 and one o'clock positions on the Wright R-3350 engine's crankcase. Wiring led from the magnetos to spark plugs fitted to each of the engine's 18 cylinders. The forward oil sump located at the six o'clock position collected engine oil for pumping back to the oil tank via the oil cooler. The rocker arm covers, engine baffling, and the magnetos were black, while the cylinders were silver. (Barthelmes)



The oil cooler inlet scoop was placed under and immediately aft of the Skyraider's engine cowling. The slot at the top and in front of the oil cooler is the boundary layer bypass inlet, which allowed excess air to escape from the oil cooler intake area. The flush-mounted bolt on the engine cowling allowed for the cowling's quick release for servicing. (Barthelmes)

The catapult bridle attachment hook was mounted on the inboard forward wing surfaces this AD-4N and other Skyraider variants, except for AD-3Ws and -4Ws. The bridle was attached to this hook and to the catapult shuttle to help pull the aircraft forward on launching. (Barthelmes)

A hatch immediately aft of the cowling boundary layer duct provided access to the oil dilution manual shut off valve. The engine vent and drain system overboard outlet was positioned low on the cowling's port side. (Barthelmes)

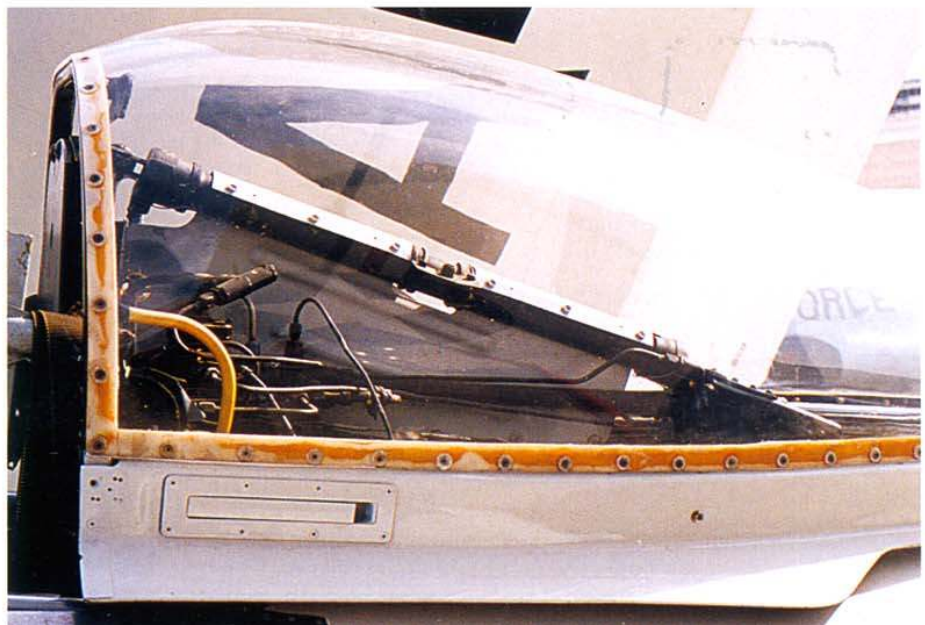


The oil cooler flap was mounted on the lower fuselage between the wing leading edges. This flap enabled heated air from the oil cooler to escape from the aircraft. Skyraider pilots electrically operated this door using a switch located on the port cockpit console. The door could be operated either manually by the pilot, or in automatic mode when the switch was placed in AUTO. (Barthelmes)

This AD-4N's upper canopy frame – used on all Skyraiders from the AD-2 – flattened at the top, after having been curved from the canopy's base frame. The red flush-mounted handle in the lower canopy frame was the exterior manual canopy operating handle. A curved interior manual operating handle was placed in the lower forward inside surface. The coiled microphone headset extension cord was stowed to port of the headrest, while the shoulder harness attachment bracket was under the headrest. The red pull handle activated the bail out warning bell. (Barthelmes)

The XBT2D and AD-1 series canopy had a squared off front section to fair with the windshield's rear. This canopy was slightly longer than the canopy used on later Skyraiders because the early device was designed to cover the complete actuator cylinder and extension rod assembly. (Barthelmes)

The canopy shape remained the same on all later Skyraider models. The usual canvas cover was removed from this AD-6's canopy actuator, which ran parallel to the top of the fuselage. The air-to-oil transfer cylinder ran from the top of the headrest to an attachment bracket on the fuselage uppersurface. (Dann)

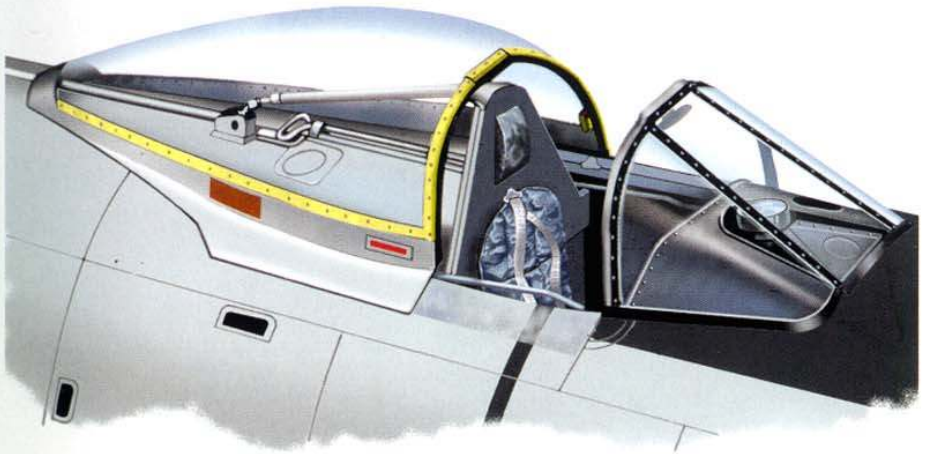


Uncovered hand grips were placed along the port side of the AD-4N's mid-fuselage. These grips aided the pilot in climbing aboard the aircraft. Skyraiders also had a covered footstep on the lower fuselage for the pilot's use. The red strut placed near the canopy's aft end was the wing fold jury strut, which was connected to the outboard wing panel when the wings were folded for storage. (Barthelmes)

The oval water injection system supply tank access panel was located above the starboard wing root. This system added up to 20 gallons (75.7 L) of water to the engine for increased power output without the danger of overheating or premature fuel ignition. Pilots usually employed the water injection system for maximum weight takeoffs. (Barthelmes)

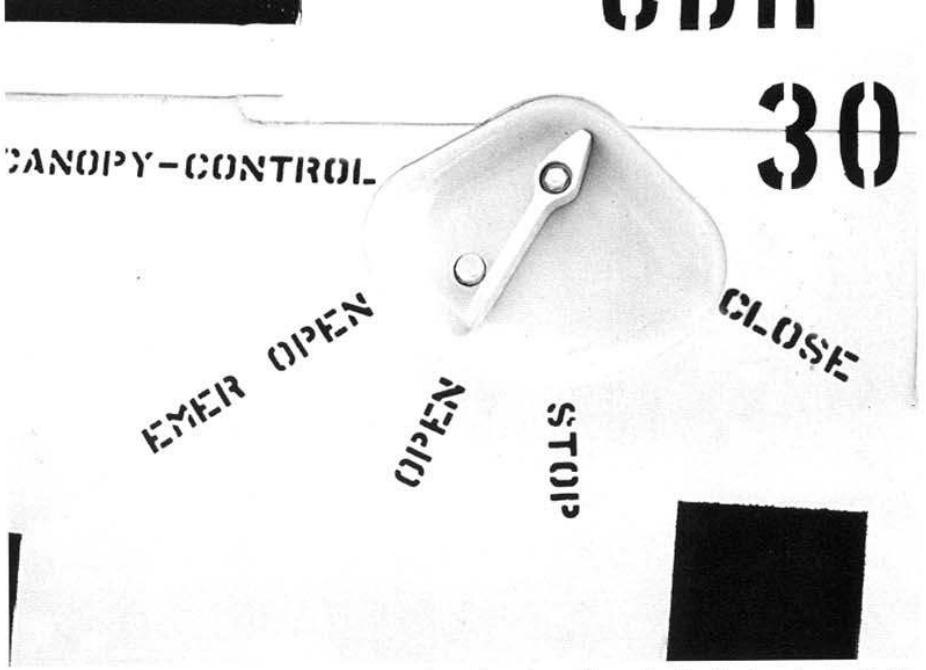
A-1H (BuNo 137552) of VA-115, the 'Arabs,' was decorated on the occasion of the type's last combat launch from the USS KITTY HAWK (CV-63). A banner tied to the camel's tail read SAN DIEGO BOUND, while SAYONARA KITTY HAWK and see YOU AT THE OASIS were placed aft of the camel. The VHF/UHF (Very High Frequency/Ultra High Frequency) blade antenna was fitted aft of the canopy (Tailhook Assn.)

Canopy



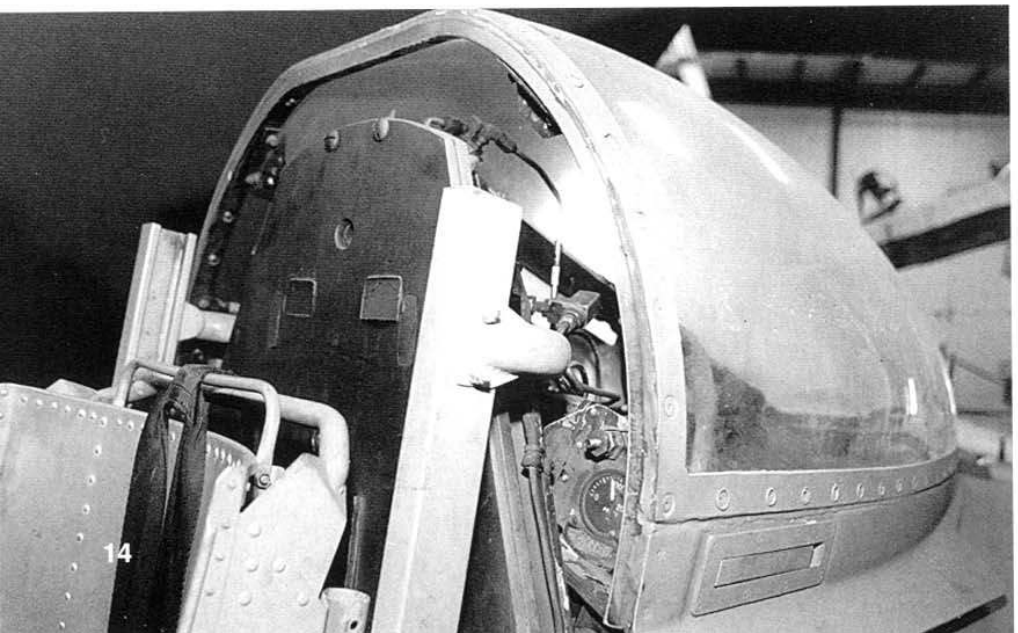
This A-1H (BuNo 137517) used the canopy with flattened upper front edge fitted on all Skyraiders from the AD-2. The red RESCUE arrow under the windshield pointed to the external canopy control, which was indicated by a black curved line. The prominent RESCUE marking alerted deck and ground crews to the location of the canopy control. (Tom Hansen via Mutza)

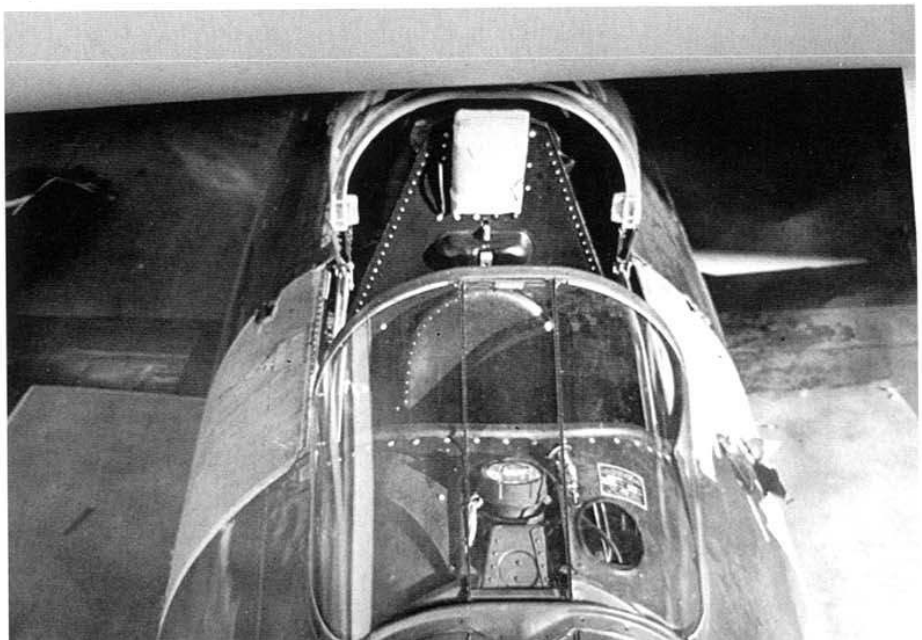
A pressure gauge and air filler valve for the canopy emergency actuator system was mounted to port and aft of the pilot's seat. This A-1H was transferred from the US Air Force (USAF) to the South Vietnamese Air Force (VNAF). The VNAF replaced the Yankee extractor seat with a permanently mounted bucket type seat. The Yankee system's rails were retained behind the pilot's seat. (Barthelmes)



The external canopy control was located on the aircraft's port side, just underneath the sliding hood. The canopy was hydraulically actuated and could be stopped at any position. Moving the handle to the EMER OPEN position allowed the canopy to be opened using discharge from an air bottle set at 1980 pounds per square inch (PSI). The gauge for this system was fitted to port of the headrest. (Dann)

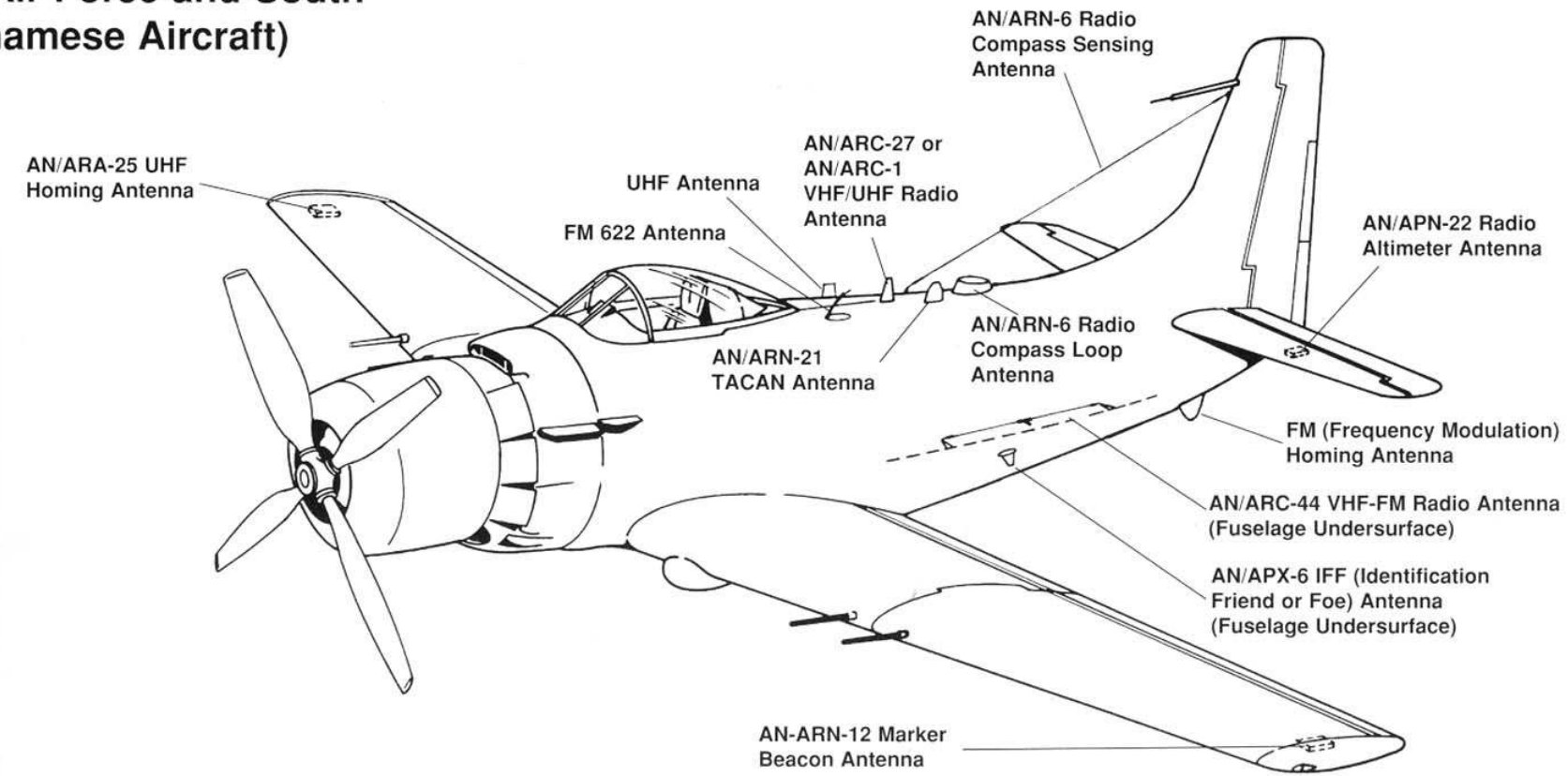
A curved windshield offering improved pilot vision was fitted to the AD-2. This windshield replaced the flat-paneled item used by early Skyraiders. A Mk VIII gun sight was fitted to the instrument shroud behind the windshield. This AD-2 was also fitted with the early style bucket seat with headrest. (Douglas)





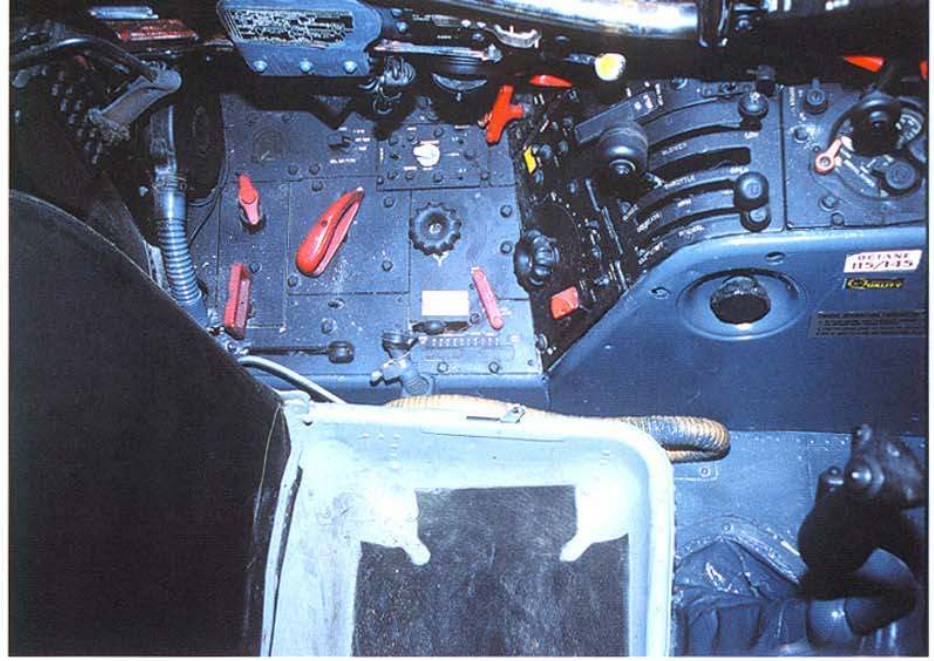
USAF A-1s carried several mission specific antennas not found on US Navy aircraft. An FM622 whip antenna for communicating with ground troops was located aft of the canopy. Behind the FM622 was the VHF/UHF (Very High Frequency/Ultra High Frequency) blade antenna, followed by the wire for the ARN-6 Radio Compass Sensing antenna. The small white aerial aft of the ARN-6 wire was for the Skyraider's TACAN (Tactical Air Navigation) system. (SDAM)

A-1 Antenna Locations
(US Air Force and South Vietnamese Aircraft)


AN/ARN-6 Radio Compass Sensing Antenna
AN/ARA-25 UHF Homing Antenna
UHF Antenna
AN/ARC-27 or AN/ARC-1 VHF/UHF Radio Antenna
FM 622 Antenna
AN/APN-22 Radio Altimeter Antenna
AN/ARN-21 TACAN Antenna
AN/ARN-6 Radio Compass Loop Antenna
FM (Frequency Modulation) Homing Antenna
AN/ARC-44 VHF-FM Radio Antenna (Fuselage Undersurface)
AN/APX-6 IFF (Identification Friend or Foe) Antenna (Fuselage Undersurface)
AN-ARN-12 Marker Beacon Antenna

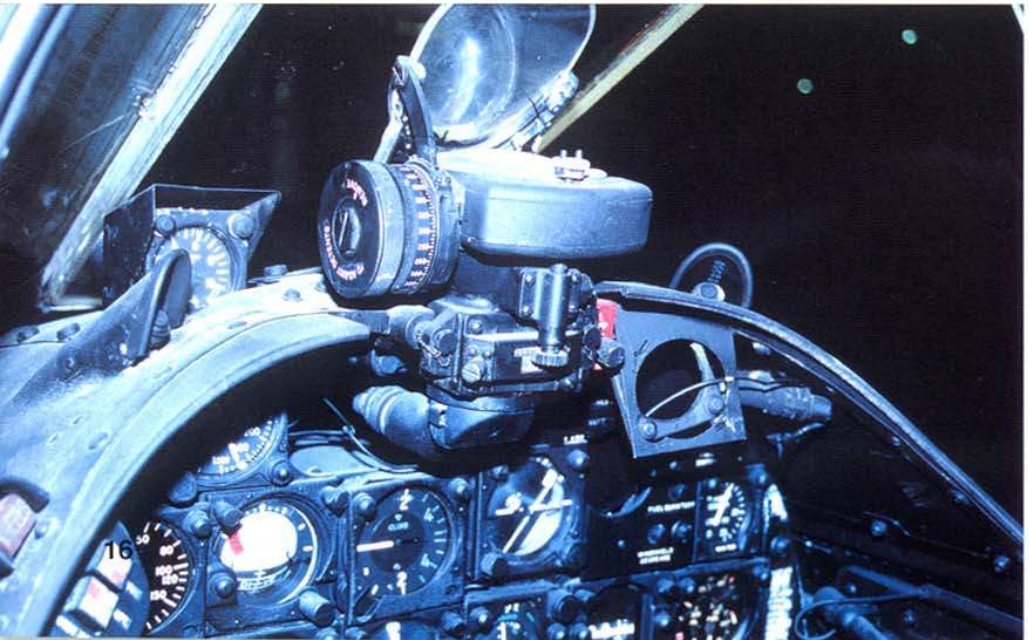
Each instrument in this Navy A-1H (AD-6) panel had an individual bezel and mounting socket on the main instrument panel. This arrangement made maintenance, change-out, or upgrading of individual instruments easier than in earlier models of the Skyraider. The base for the Mk 4 Mod 20 gun sight was mounted at the top of the instrument shroud. (Barthelmes)

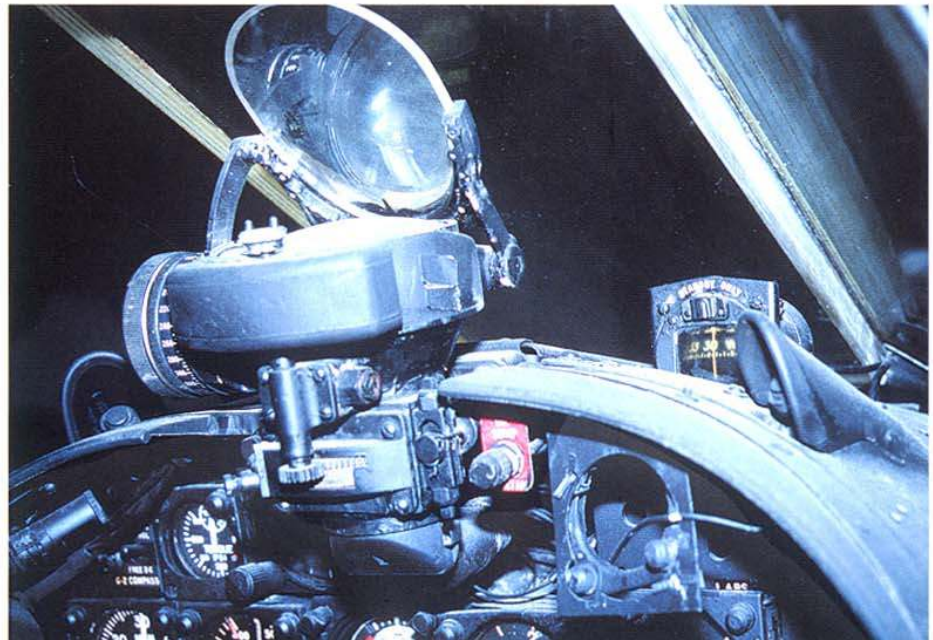
The Mk 4 Mod 20 illuminated gun sight was used to aim the guns, gun camera, and external stores. The sight was also linked to the bomb director control release. The small indicators under the glare shield hoods to port and starboard of the gun sight were the bomb director and T/O (take off) light indicators, respectively. (Barthelmes)



The typical port side console of a Navy A-1H (AD-6) contained controls for the power, trim, and hydraulic systems. The pilot was able to draw fuel from individual tanks using the red fuel selector valve. The landing gear actuator lever was placed at the front section of the console. Skyraider interiors were painted Dark Gull Gray (FS36231) with Instrument Black (FS27038) panels. (Barthelmes)

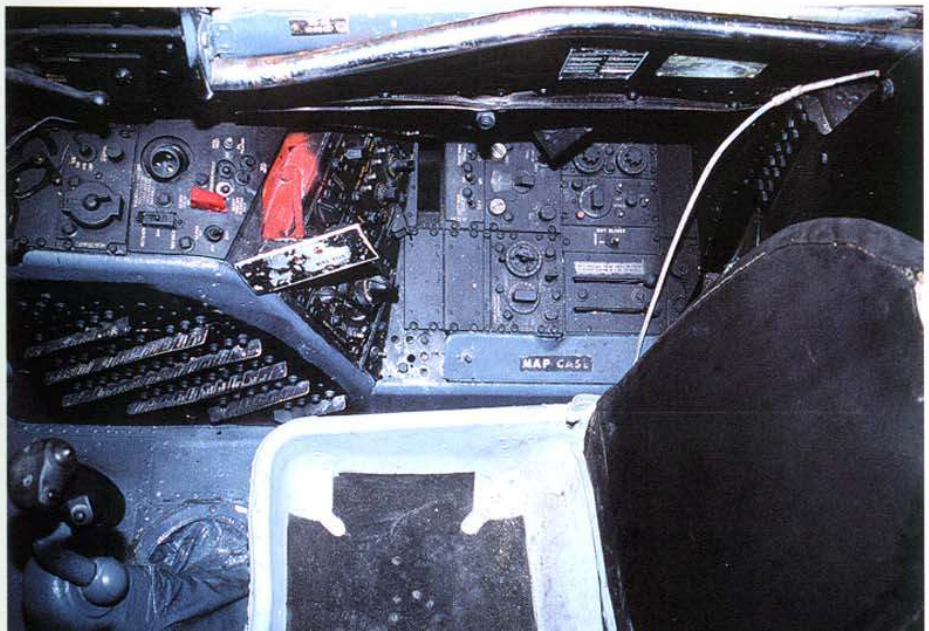
The standby magnetic compass was placed to starboard and forward of the gun sight. This compass provided basic navigation in case the Skyraider's radio compass failed. The accelerometer normally fitted to starboard of the sight was missing from this aircraft. The instrument shroud shielded the instrument panel from direct sunlight, which would prevent the pilot from clearly reading his instruments. (Barthelmes)



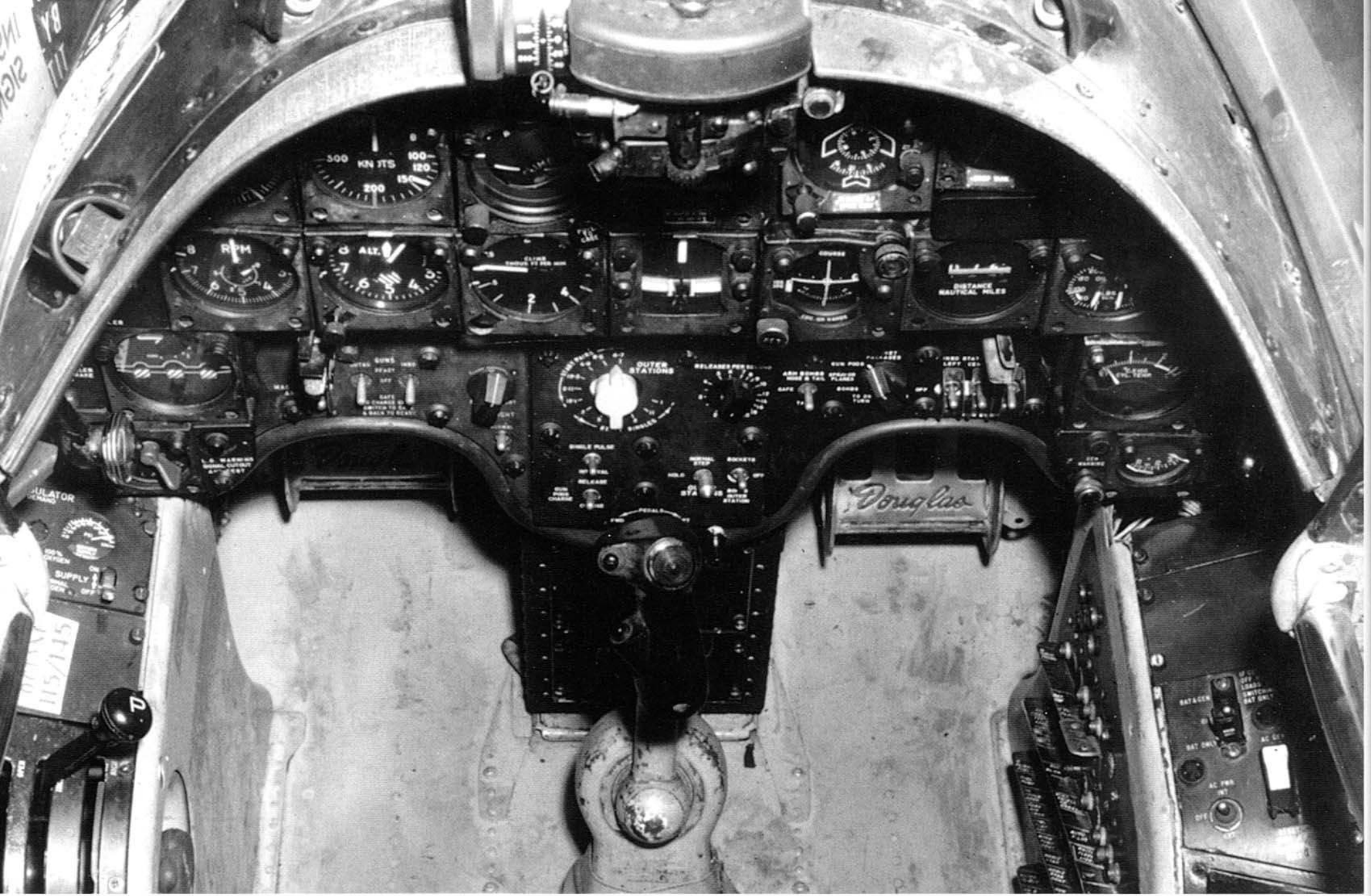


The armament control panel was mounted below the main flight instruments and directly below the retractable chart board. An auxiliary instrument panel was mounted below the armament panel and contained the master direction indicator (top left), external fuel quantity indicator (top right), and gyro horizon indicator (hidden by the control stick base). (Barthelmes)

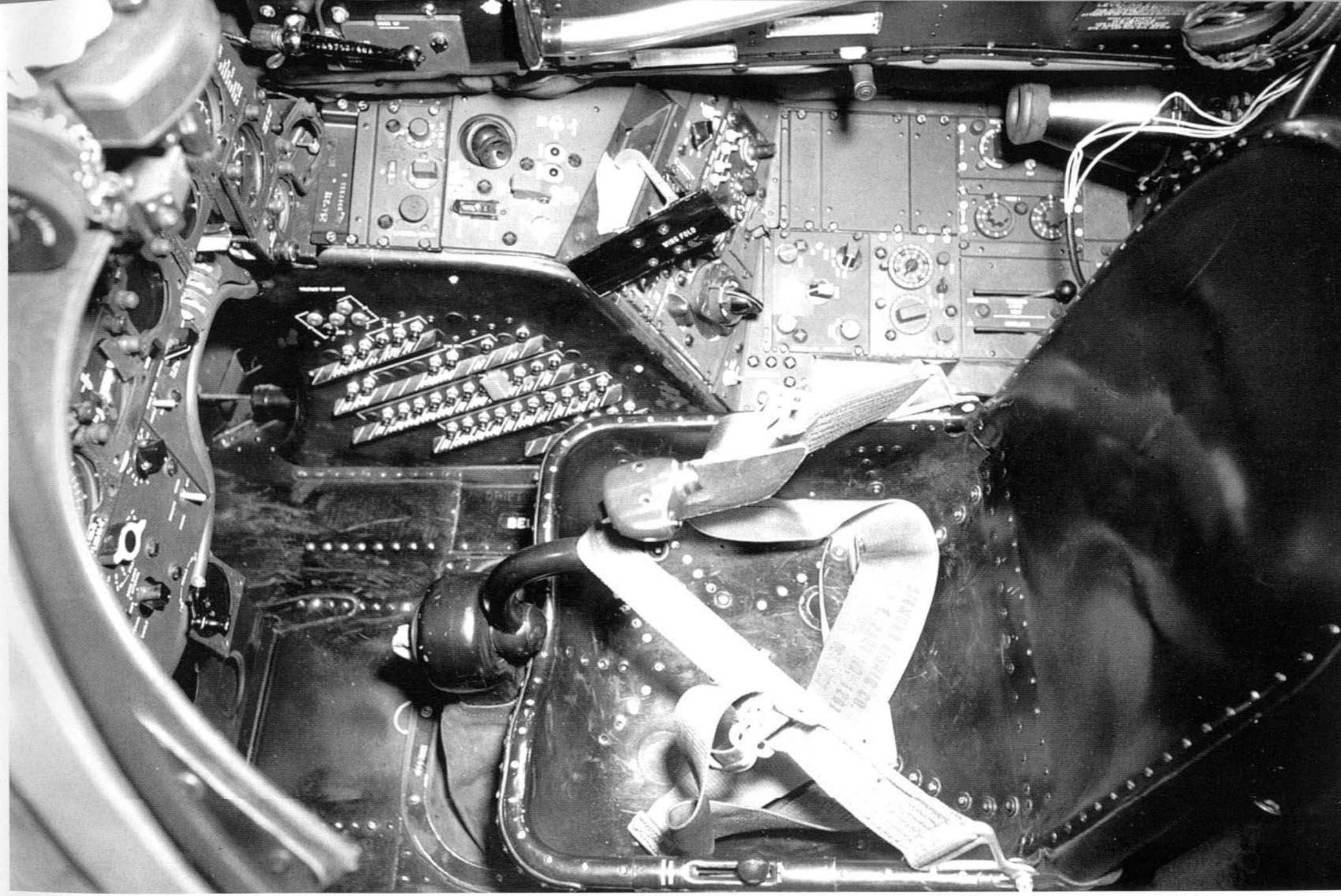
The starboard console contained most of the Skyraider's electrical controls. The circuit breakers were fitted to the console's vertical portion. The 'open' control was for the wing fold mechanism – here, the wings were folded. Controls for the radio, lighting, and autopilot were also placed on this console. The tailhook control was located at the front of the console. (Barthelmes)



The port console contained the Skyraider's throttle, propeller and mixture controls, and oxygen system controls. The landing gear actuation handle was located directly above the oxygen control. The large knob on the vertical portion of the console was the throttle and propeller control friction lock. The upper two control stick grip buttons were the bomb and rocket release control (left) and the control surface trim switch. (Barthelmes)



Flight instruments dominated the A-1H's main instrument panel, which was painted semi-gloss Instrument Black (FS27038). The airspeed indicator (in knots) was placed in the panel's upper left portion, with the altimeter directly below. Flanking the altimeter were the tachometer to port and rate of climb indicator to starboard. The landing gear position indicators and magneto selector were located below the tachometer. The wheel-shaped landing gear lever was next to the gear position indicators. Armament controls were placed in the lower center section of the panel, below the turn-and-bank indicator. The G-2 compass indicator was mounted on the upper starboard section of the instrument panel. Immediately below this indicator was course indicator, which was flanked by the turn and slip indicator to port and the range indicator to starboard. The fuel quantity indicator was placed to starboard of the range indicator and above the engine gauge unit and carburetor air temperature indicator. (Harry Gann via McDonnell Douglas)



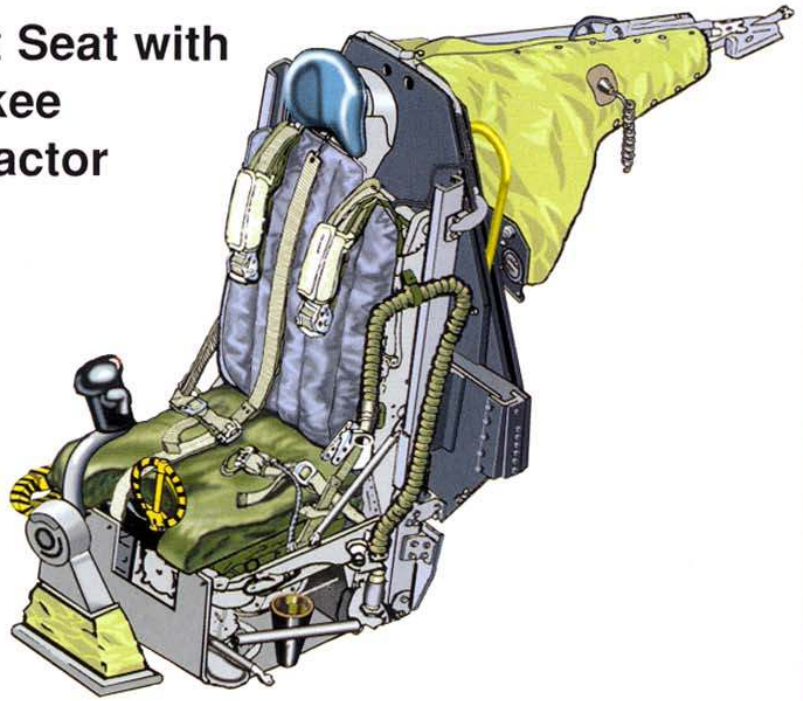
An inertial lock was placed along the lower port side of the AD-6's pilot seat. This lock prevented the shoulder harness inertia reel from moving and secured the pilot in his seat. When the inertial lock was unlocked, the pilot could lean forward, although the reel would lock at a pre-determined G (gravity)-load. The main circuit breaker panel was located along the starboard console side. The dark, hook-shaped tailhook control lever was mounted just above the starboard console. A round ventilation air outlet was mounted on the starboard console's forward section, with the wing fold lever placed aft and to port of this outlet. The automatic pilot was controlled using a large knob placed below the wing fold lever. Aircraft lighting controls were placed beside the automatic pilot selector. The aft console held controls for the radio compass, radios, cockpit ventilation, and the IFF (Identification Friend or Foe) system. (Boeing Historical Archives)

This A-1J (BuNo 142045) was assigned to the 516th Fighter Squadron, 41st Tactical Wing of the South Vietnamese Air Force (VNAF) at Da Nang in September of 1966. The aircraft was finished in overall COIN Gray (FS36473) with black painted aft of the cowling to hide the engine exhaust stains. The canopy actuator rod extended from the back of the headrest to the canopy guide rail. (Tom Hansen via Mutza)

The pilot of a Navy A-1H warms up his engine prior to launch during the Vietnam War. This aircraft was among those Navy Skyraiders fitted with the Yankee extraction system during scheduled maintenance in 1966. The rod extending from the upper engine cowling was the nose flap position indicator. This indicator told the pilot that the nose flaps were open; this indicator retracted when the flaps were closed. (US Navy)

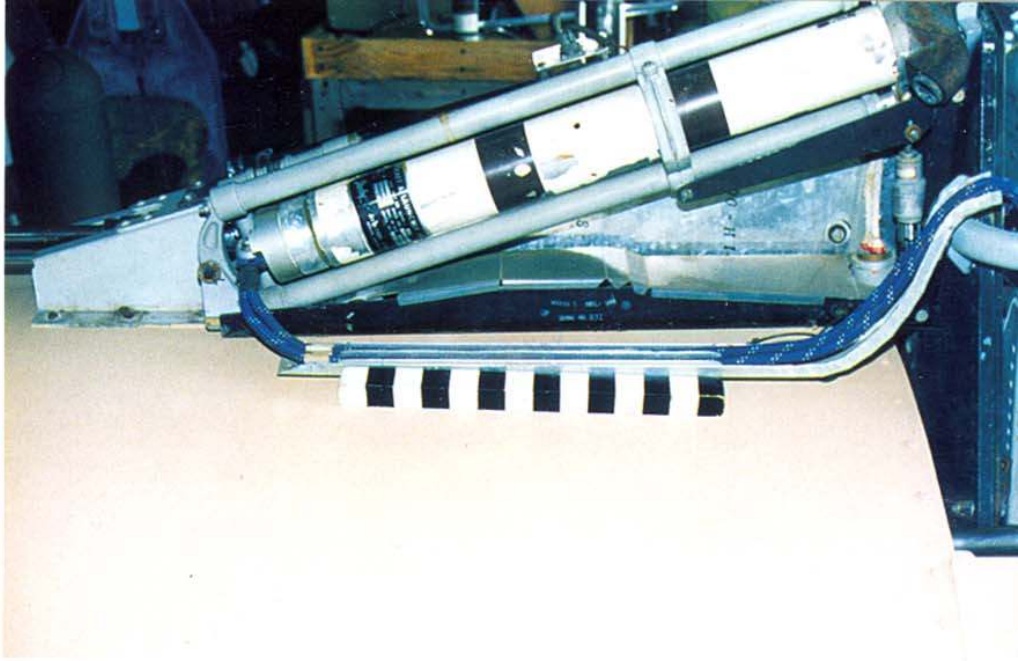
The canvas shroud normally covering the canopy actuator rod was removed from this displayed A-1. The yellow curved handle on the canopy's forward starboard corner was the manual canopy operating handle. Flush handgrips placed in the fuselage surface assisted pilots in climbing on and off the aircraft. The VHF/UHF (Very High Frequency/Ultra High Frequency) radio antenna was mounted immediately aft of the canopy. (Dann)

Pilot Seat with Yankee Extractor



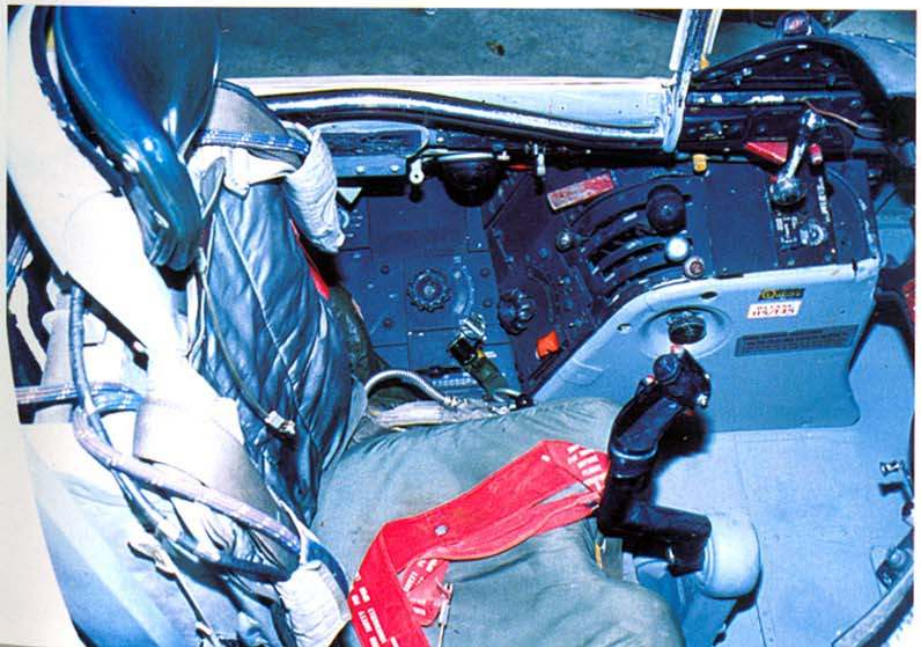
The Yankee seat assembly provided the crew a means to abandon the Skyraider at zero altitude and at zero to maximum aircraft speed. The pilot's seat was mounted on vertical rails for upward movement when the Yankee system was activated. The flexible umbilical for the emergency canopy jettison cylinders was located inside the sliding enclosure. (Barthelmes)

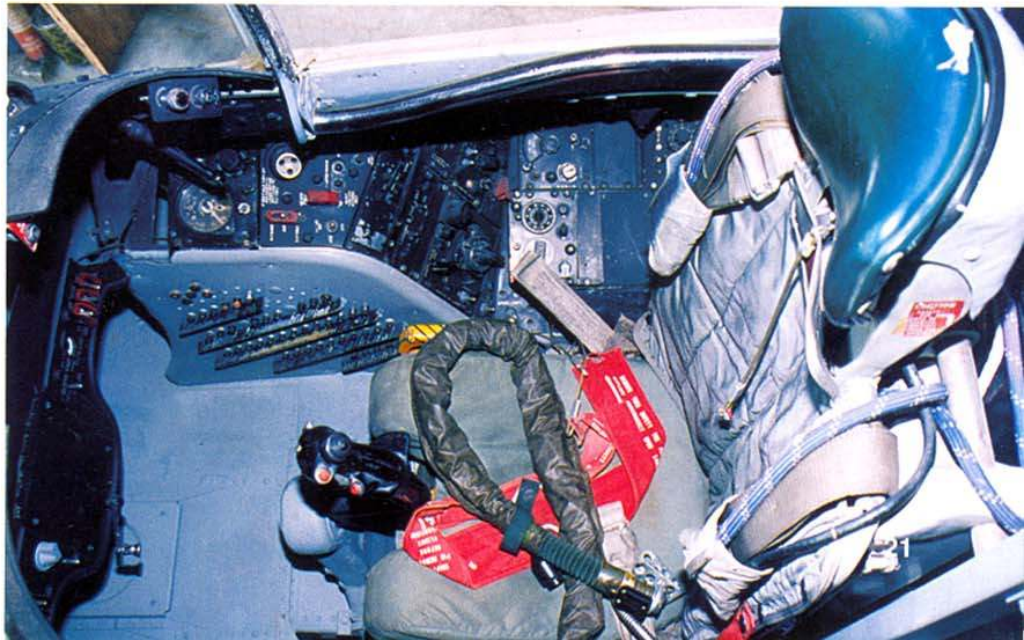
The Yankee seat assembly included a headrest, a contoured seat back, a hinged seat pan, and rails with slider blocks for ease of motion during vertical travel. A PCU3 parachute pack was extracted with the pilot, along with a survival kit inside the padded seat bottom. Shoulder and lap belts held the pilot in the seat. The large black curved handle on the port console was the throttle. (Barthelmes)

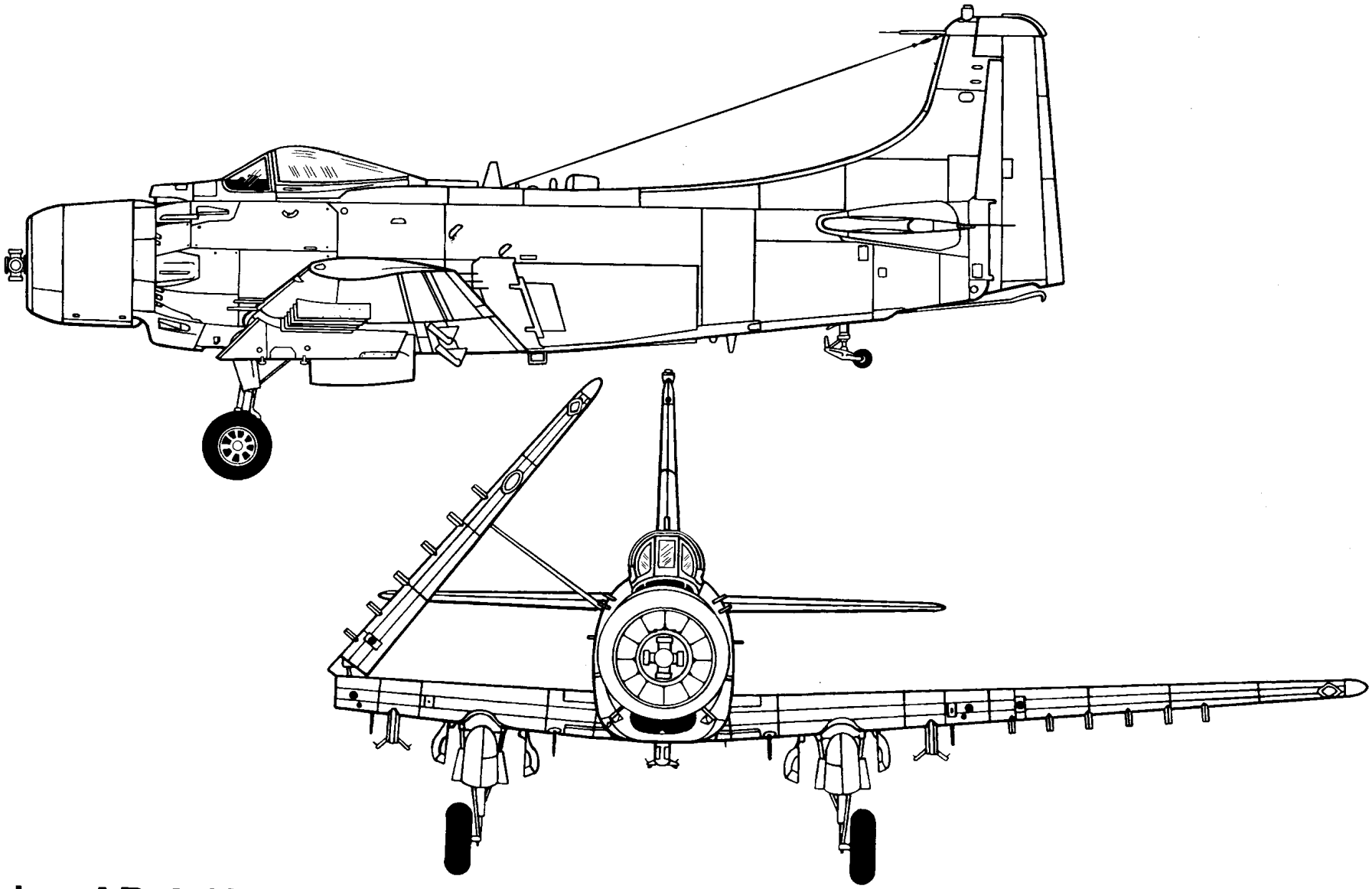


The tractor rocket of the Yankee system was mounted on the starboard side of the sliding enclosure actuator mechanism. The extraction rocket and launch rail assemblies were attached to the seat rail assembly and fuel cell compartment cover. A black and white photo scale marked at one inch (2.5 cm) intervals was placed beside the rocket mount and was not found on Skyraiders in service. (Barthelmes)

The Yankee extraction sequence was initiated by pulling on the extraction control handle in the front center of the seat assembly or the alternate control handle on the side of the seat. An oxygen hose was draped over the seat. This hose – which included the microphone cord – was fitted to the pilot's oxygen mask to supply a mix of oxygen and air for high altitude flights. (Barthelmes)



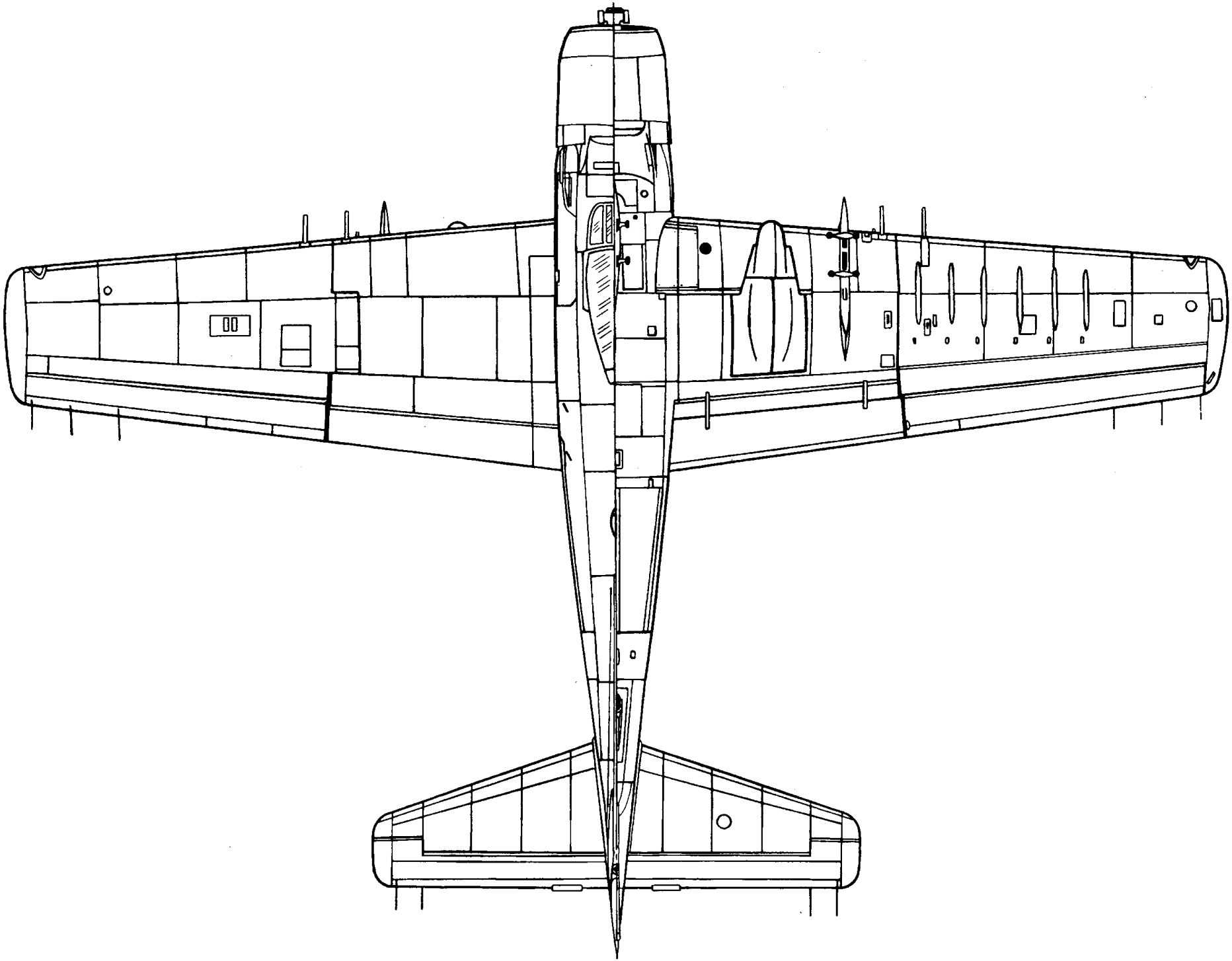




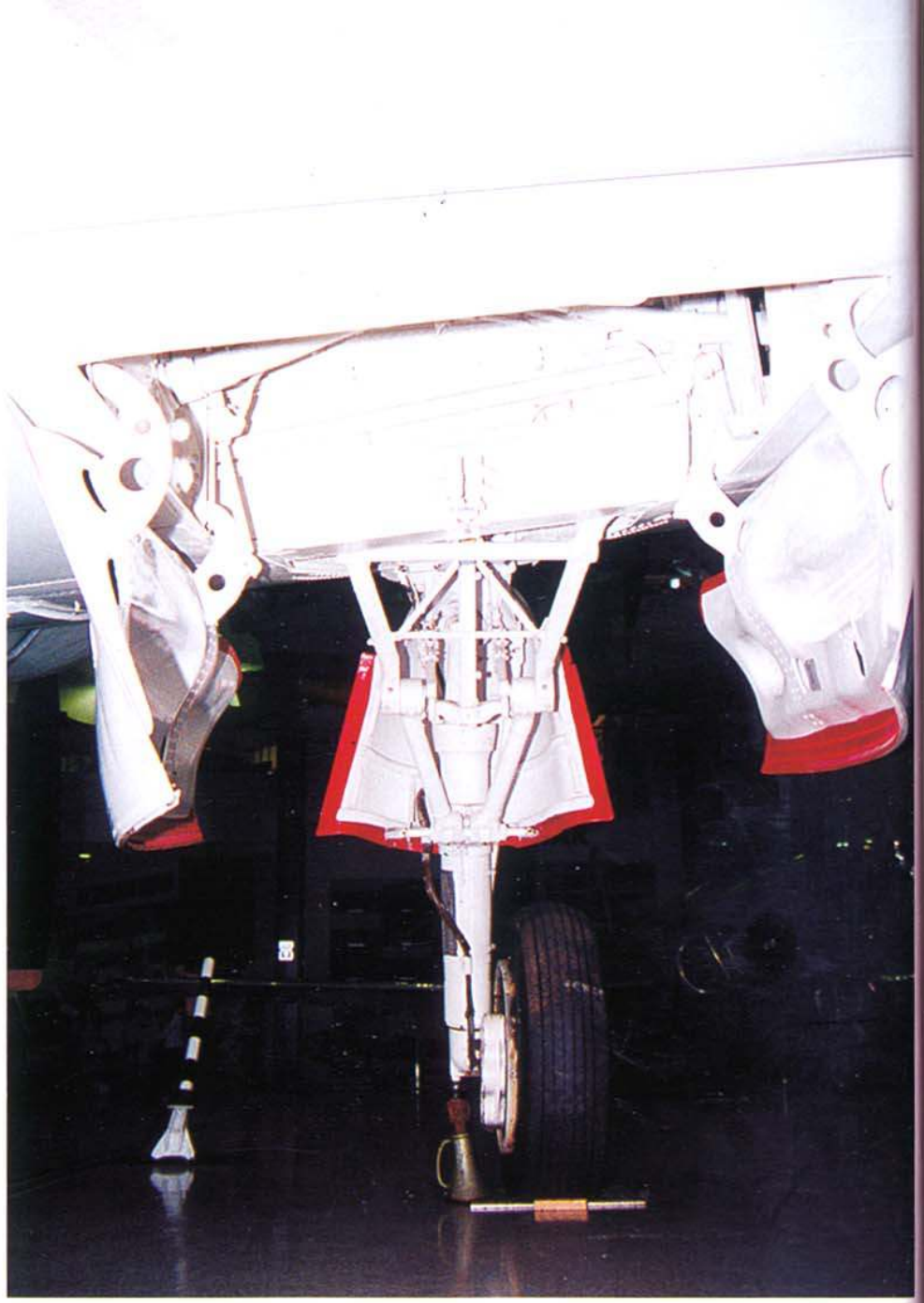
Douglas AD-6 (A-1H) Skyraider Specifications

Wingspan:.....50 feet 1/4 inch (15.2 M)
Length:.....39 feet 2 inches (11.9 M)
Height:.....15 feet 8 inches (4.8 M)
Empty Weight:.....11,902 pounds (5398.7 KG)
Maximum Weight:.18,106 pounds (8212.9 KG)
Powerplant:.....One 2700 HP Wright R-3350-26WB 18-cylinder air-cooled radial engine.

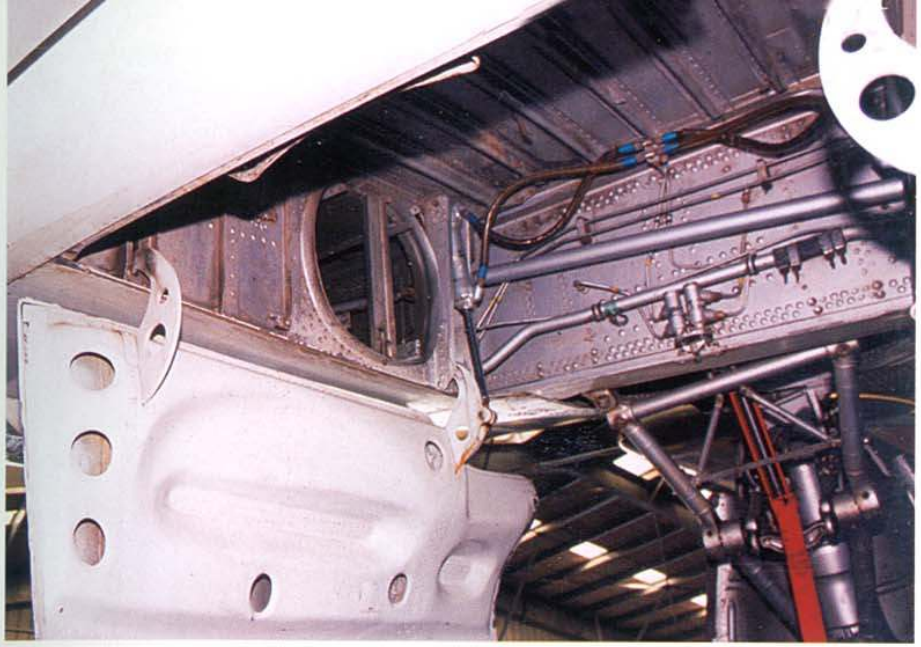
Armament:.....Four 20MM M3 cannons in the wings with 200 rounds per gun. Maximum of 8000 pounds (3628.8 KG) of ordnance on 15 stations on the wing and fuselage undersurfaces.
Maximum Speed:...322 mph (518.2 KMH)
Service Ceiling:.....28,500 feet (8686.8 M)
Range:.....1315 miles (2116.2 KM)
Crew:.....One



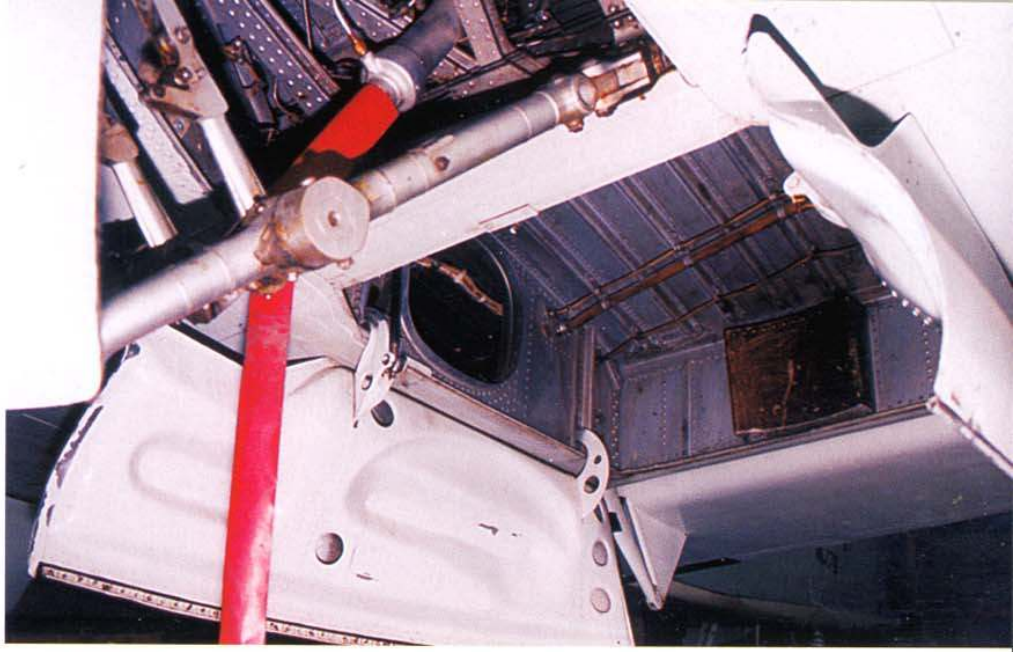
The AD-6 (A-1H) Skyraider's main landing gear was fitted with a 32 x 8.8-inch (81.3 x 22.4 cm) tire mounted on a drop center, cast aluminum, open spoke wheel. This wheel included a removable outer rim for ease of maintenance. The curved door covered the upper strut section when the landing gear was retracted. (Barthelmes)



Each Skyraider main landing gear consisted of a single main strut and wheel. The landing gear retracted aft in a 95° arc and rotated 96° inboard to lie flat in the wheel well. Two inward-retracting doors enclosed the wheel and the lower strut portion when retracted. The landing gear, wheel wells, and inner gear door surfaces were painted Gloss White (FS17875) from the mid-1950s. (Dann)



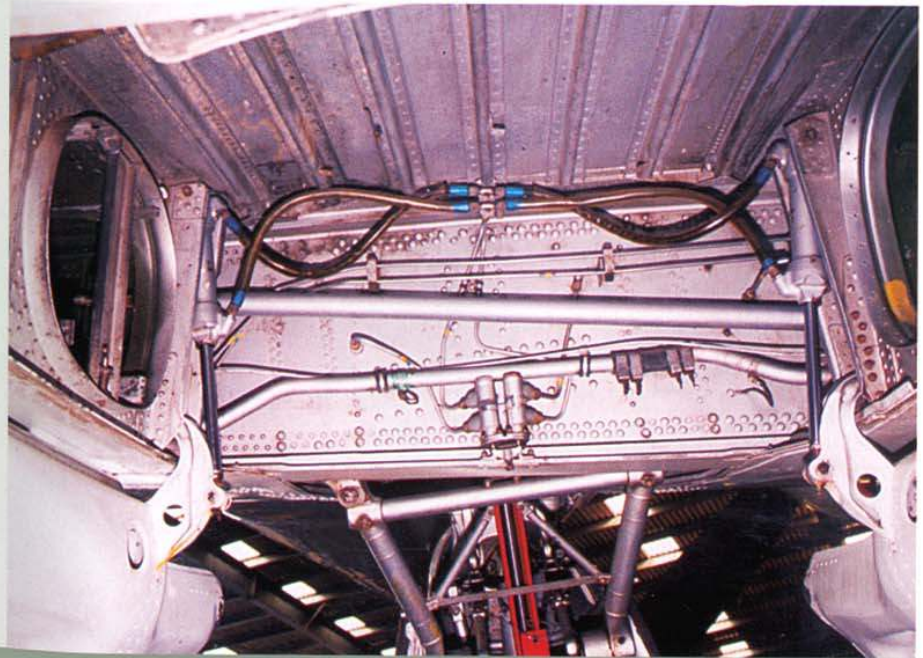
The ammunition compartment access openings were placed inside the outboard wheel well bulkheads. Hoses for sending hydraulic fluid to the main landing gear door actuator ran along the upper forward bulkhead. Wheel wells and gear struts were finished in Aluminum (FS17178) on this French AD-4N. (Barthelmes)



A red REMOVE BEFORE FLIGHT tag was attached to a lock fitted to the main landing gear's upper strut. This lock prevented inadvertent retraction of the gear while the Skyraider was on the ground. The rectangular panel on the aft well bulkhead was a wheel stabilization pad, which steadied the main gear wheel upon retraction. (Barthelmes)

The wheel well ceilings were reinforced with metal ribs, which ran fore-to-aft along the ceiling's surface. The large diameter rod in the center of the port well bulkhead was the aileron push-pull rod, while the smaller diameter pipe below the aileron rod was the wing drop tank fuel line. Skyraider wheel wells were finished in Aluminum on French Skyraiders. (Barthelmes)

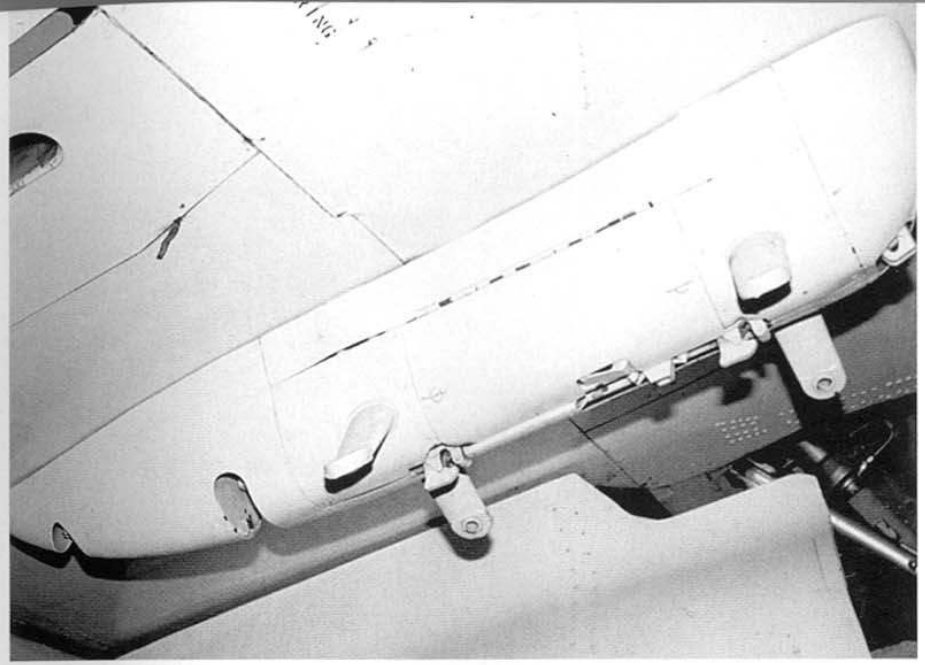
The starboard wheel well was almost identical in construction to that of the port wheel well. One area of difference found in the starboard well was the pitot line and pitot tube heating element wiring, which was contained within metal tubing attached to the well's ceiling. This wiring connected the cockpit with the pitot tube mounted on the starboard wing undersurface. (Barthelmes)



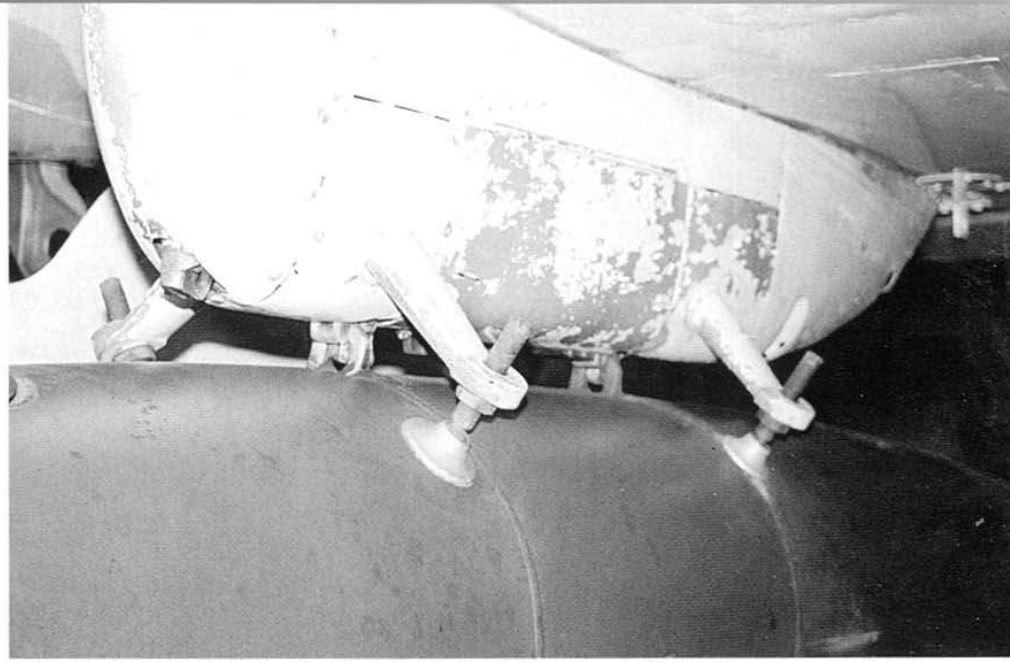
The Skyraider was equipped with disc brakes for stopping the aircraft while on the ground. Parallel and immediately forward of the gear strut was the telescoping anti-sway mechanism. This mechanism prevented the wheel from moving side-to-side when the gear was extended during flight. The towing eye at the telescoping mechanism's base was used to attach a tow bar for towing the aircraft. (Dann)

The V-shaped upper drag link extended from the aft wheel well to the main gear strut. This drag strut stabilized the main strut against fore-and-aft or lateral movement. The silver actuator strut pulled the drag strut up with the main strut during gear retraction and pushed the gear assembly down during extension. Lock links fitted to the shock strut attachment fitting ensured the gear was locked when in the extended position. (Dann)

The wheel well of the XBT2D, AD-1, AD-3W, AD-4W, and AD-5 variants consisted of a circular opening in the bottom of the wing to partially house the wheel assembly. The forward landing gear door enclosed only the upper landing gear strut when retracted. This aircraft carried the early style of inboard wing pylon. (Barthelmes)



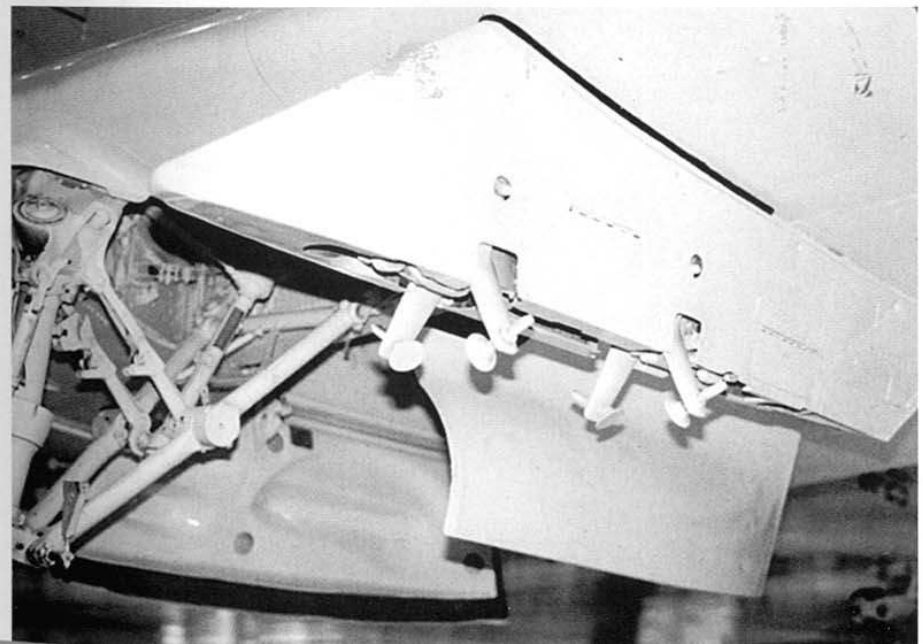
The early style of inboard wing pylon used by Skyraiders had rounded fore and aft sections meeting the wing undersurface. Two pairs of sway braces were fitted to the pylon's undersurface. These braces prevented ordnance from swaying from side to side during flight. This pylon could hold up to 2300 pounds (1043.3 KG) of stores. (Dann)

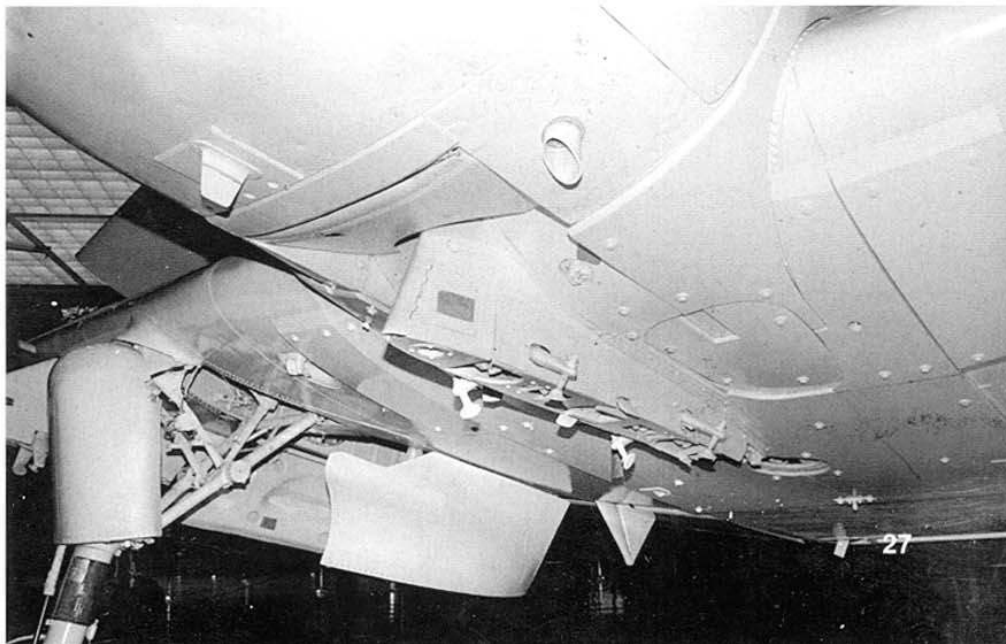


The sway braces were screwed down to the sides of a bomb mounted underneath this Skyraider's wing. Two hooks on the pylon's undersurface ran through lugs mounted on the bomb to attach the weapon to the pylon. Activating the bomb release retracted the hooks and allowed the bomb to fall away from the aircraft.

Late Skyraider variants were fitted with the Mk 51 pylon on the inboard wing stations. This pylon's leading edge was angled forward; however, like the earlier style pylon, the Mk 51 had two pairs of sway braces. The Mk 51 could hold up to 3000 pounds (1360.8 KG) of ordnance, compared to the earlier style's 2300 pound limit. (Barthelmes)

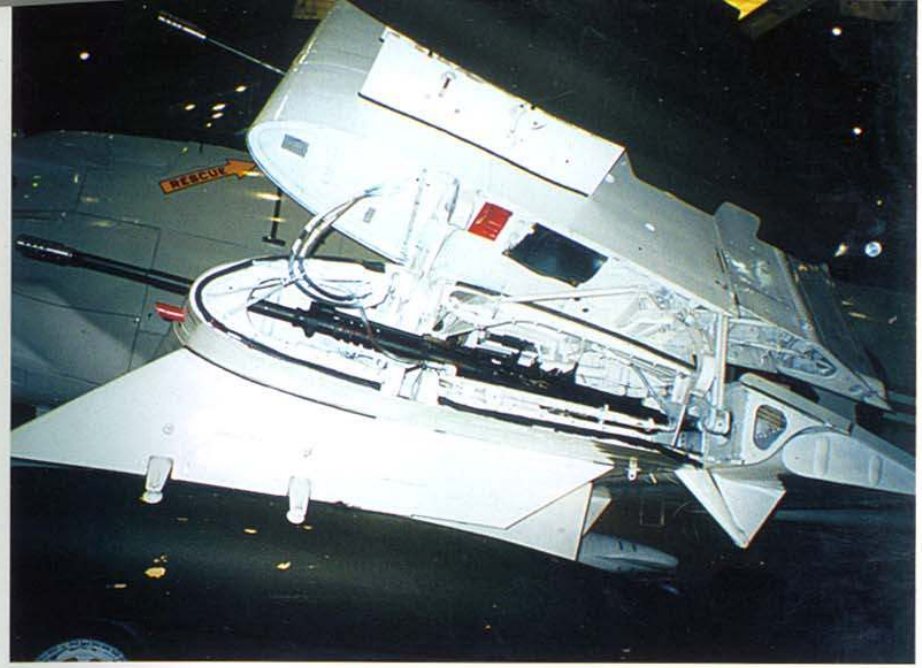
The Aero 3A pylon was fitted to the Skyraider's centerline hard point. This late variant of the 3A was fitted to the AD-6 and had carrying hooks 30 inches (76.2 CM) apart. Early 3A pylons featured carrying hooks 14 inches (35.6 CM) apart. This pylon could carry stores weighing up to 3600 pounds (1633 KG). An AN/ARC-1 VHF (Very High Frequency) blade antenna was fitted ahead of the pylon. (Barthelmes)





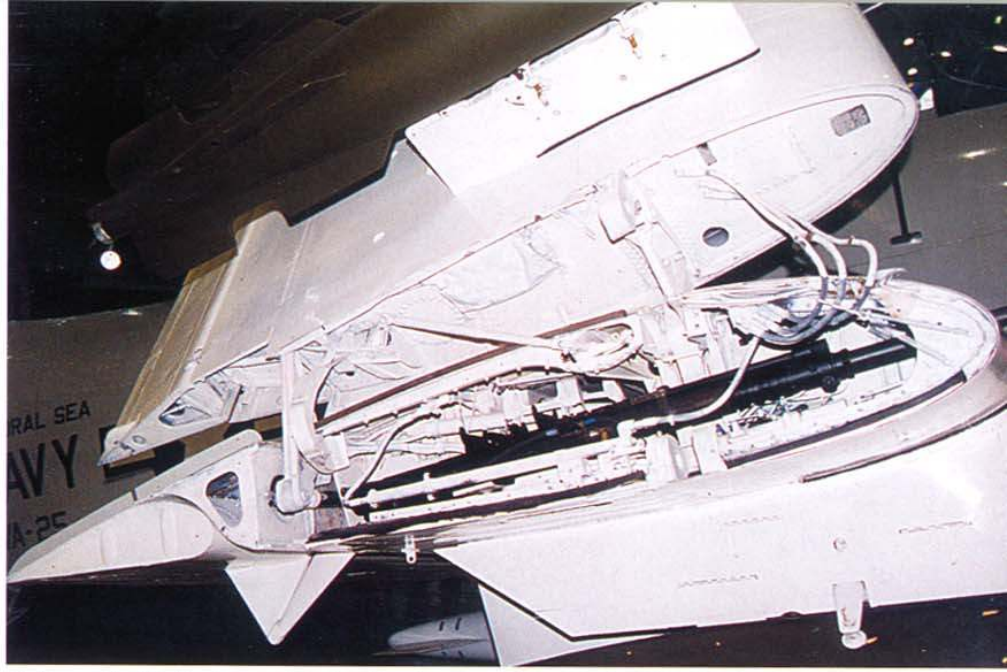
(Above) The inboard 20MM M3 cannon was removed from the starboard wing of this AD-4NA. This cavity held the weapon and the ammunition feed mechanism. The cannon could be removed from the aircraft for servicing. Bundled wiring connecting the inboard and outboard wing surfaces provided electrical power to charge the 20MM guns. Flaps mounted on the inner wing surfaces were lowered to supply greater lift for takeoff and landing, while ailerons for roll control were mounted on the outer wings.

(Below) Each wing fold mechanism consisted of two hinges on each wing mounted flush with the wing uppersurface when extended. The aileron control rod ran diagonally to the forward hinge area. Wing locking pin 'through holes' were placed on the inner and outer wing panels. The locking pin on the lower inner wing panel was hydraulically moved forward through these holes to lock the wing. The wing folding system reduced the AD's wing span from 50 feet 1/4 inch (15.2 M) to 23 feet 11 1/8 inches (7.3 M). (Jan Churchill)



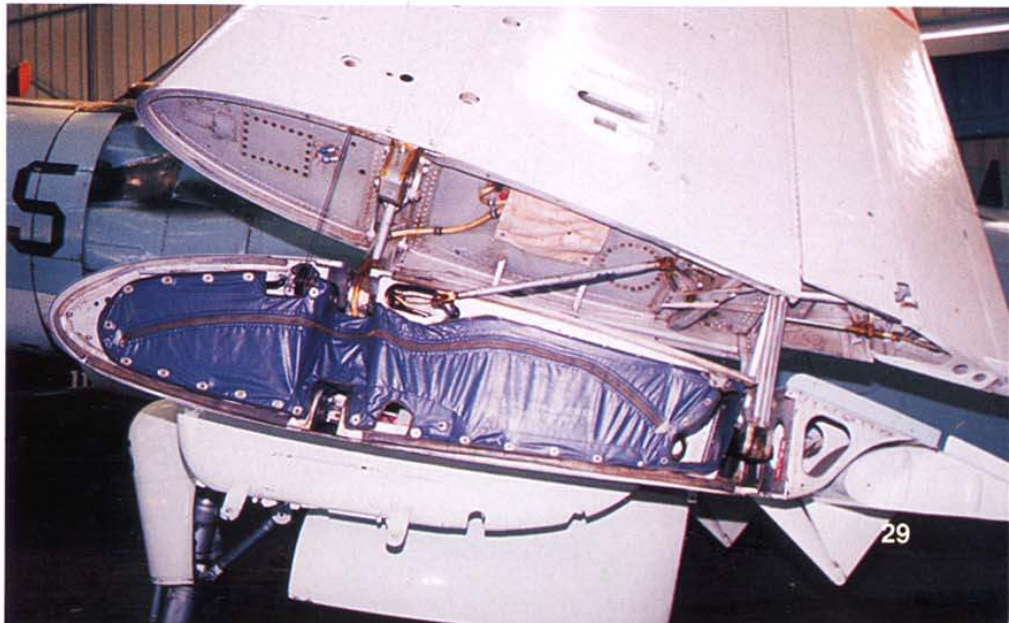
The Skyraider's 20MM M3 cannons were fitted with muzzle flash hiders, which reduced the amount of bright muzzle flash when the guns fired. This bright flash could disorient the pilot. The M3 cannon's muzzle velocity was 2330 feet (710.2 M) per second and its firing rate was 400 rounds per minute. A 500 lb (226.8 KG) Mk 82 bomb is mounted on the inboard wing pylon. (Detail & Scale/Bert Kinzey)

The Skyraider's wing armament was doubled from two 20MM M3 cannons to four, beginning with the 210th AD-4 built. The outer weapon was mounted outboard of the wing fold mechanism. Three 500 lb Mk 82 bombs are installed on the outboard wing pylons nearest the wing fold. Each Aero 14 outer wing pylon could hold up to 500 pounds of ordnance. (Detail & Scale/Bert Kinzey)



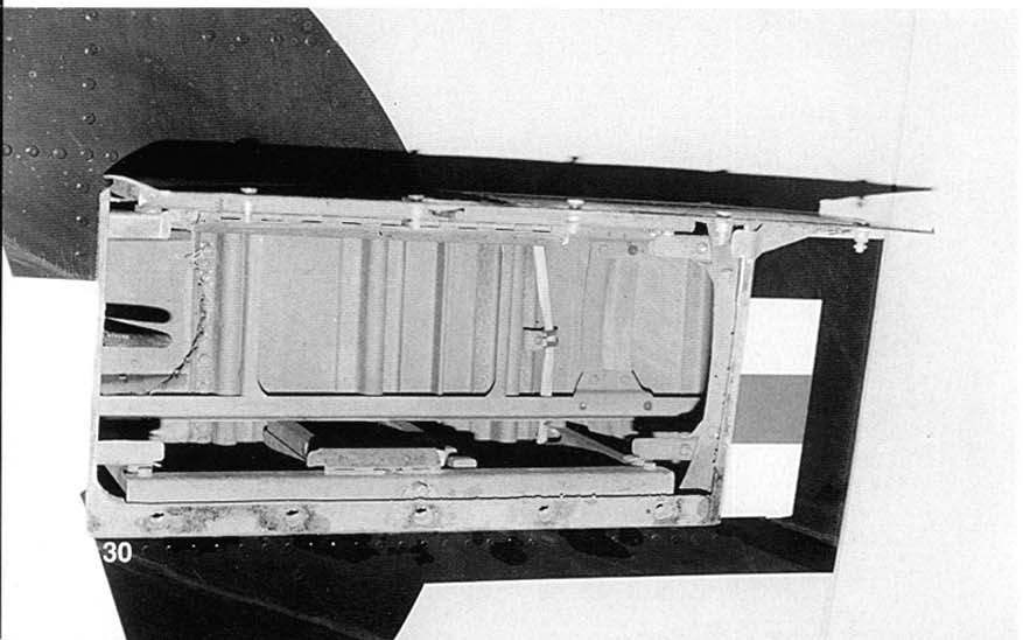
Various electrical wires and hydraulic pipes run through the Skyraider's wing fold joint. The wiring supplies power to the wingtip light and gun electrical systems. Hydraulic fluid was carried through pipes to the control surfaces and wing fold mechanism. Black rubber seals around the inside stub wing surface ensure a watertight seal when the wings were extended. (Dann)

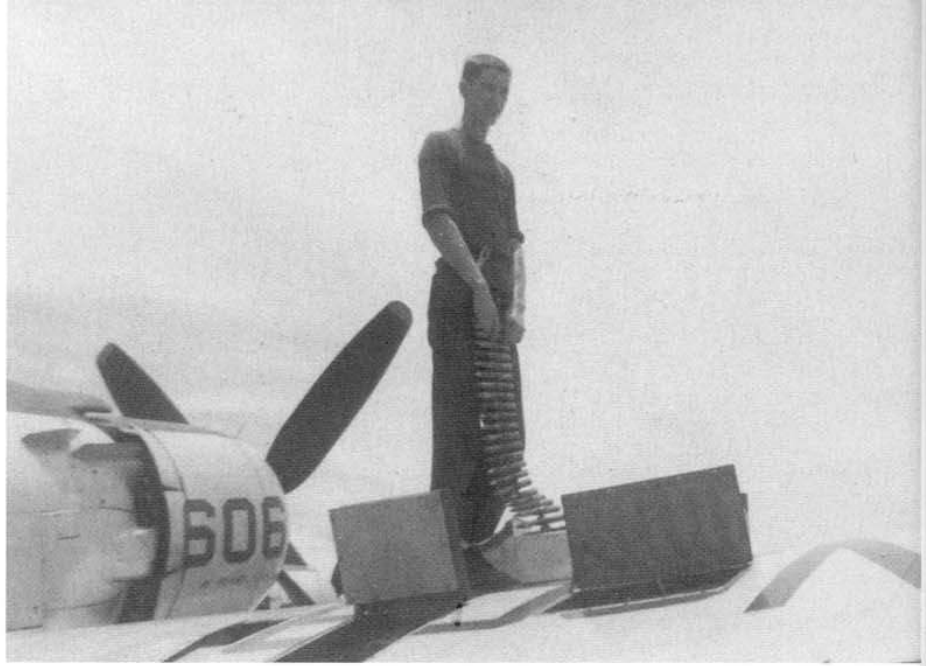
A snap-on Nylon cover was installed on the stub wing panel to keep foreign objects from the gun charger and other mechanisms. Nylon replaced canvas, which was originally used for this cover. Snaps on the cover's edges fitted onto prongs fitted to the stub wing's inner surface. This cover contained a zipper for visual inspection or minor maintenance of the wing fold mechanism and the inboard 20MM cannon. (Barthelmes)



This AD-1 (BuNo 09164) was assigned to VA-3B, Attack Carrier Air Group (CVAG)-3 on the USS FRANKLIN D. ROOSEVELT (CVA-42) during 1947. The Skyraider was displayed at the Cleveland Air Races in September of 1947 with a smoke generator on the right inboard wing pylon. This generator was used to lay down covering smoke behind and below the aircraft. (R. Besecker)

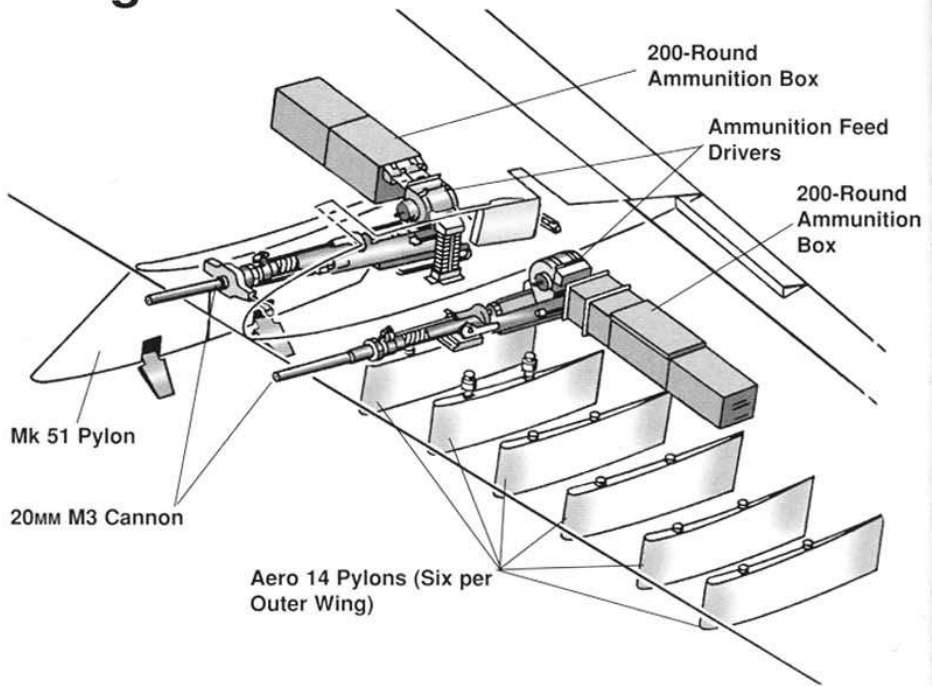
Each ammunition box access door on the Skyraider was hinged to open forward. Five Dzus fasteners on the door's aft edge secured this hatch to the wing surface. The ammunition boxes each held 200 rounds of 20MM High Explosive, Armor Piercing, and Incendiary ammunition. The ammunition well was finished in Zinc Chromate (FS34151). (Dann)



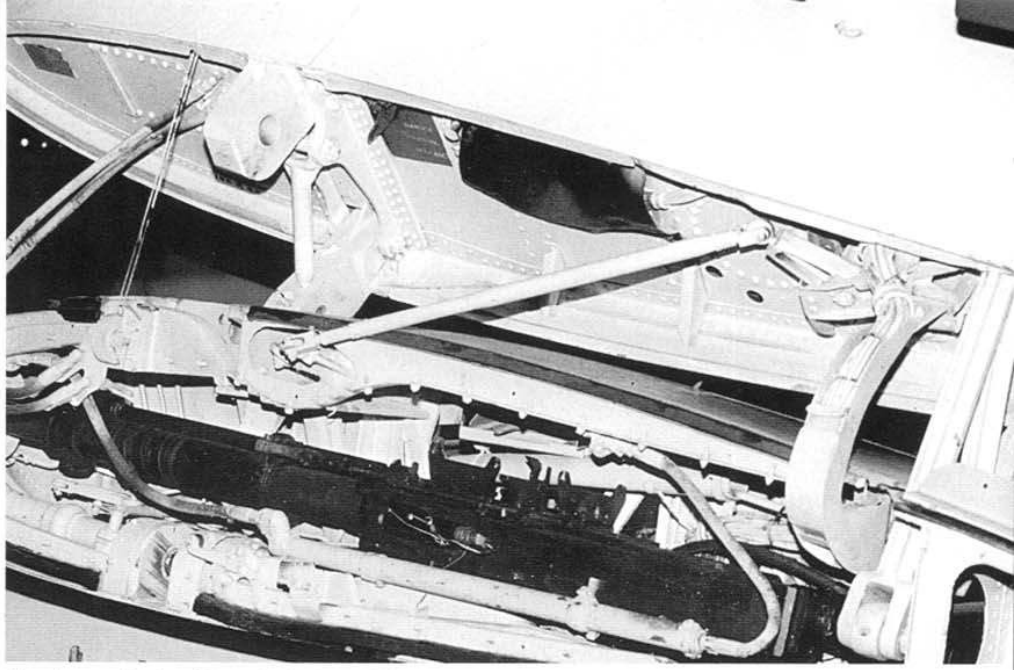


AO3 (Aviation Ordnanceman 3rd Class) Paul Rhodes begins loading 20MM ammunition into this Skyraider's right outboard ammunition box. Doors for the ammunition boxes – one per gun – were located on the upper wing surface. The open hatch by Rhodes' feet covered the outboard gun's feed mechanism, while the opened door nearest the fuselage accessed the inboard weapon's ammunition box. (Paul Rhodes)

Wing Armament



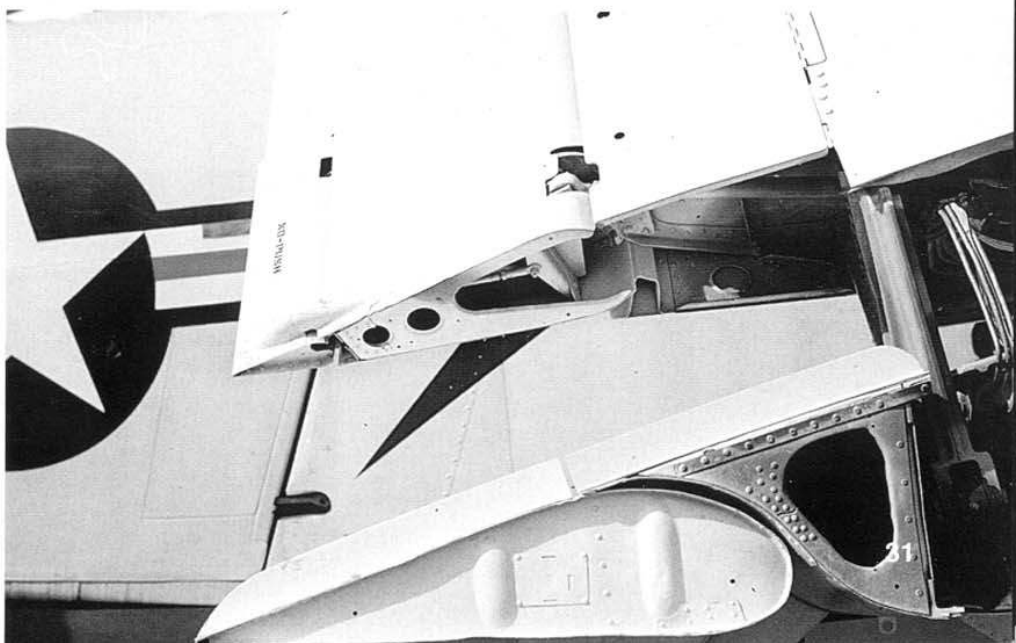
Control cables for the port aileron trim tab ran immediately ahead of the Skyraider's forward wing hinge. The pilot adjusted the aileron trim tabs using controls mounted on the port cockpit console. Aft of the wing hinge was the aileron push-pull tube, which carried control inputs from the pilot's control stick to the aileron. The wing fold internal area was painted Insignia White (FS17875). (Dann)



The forward wing hinge included a block containing a through hole. This block fit within the hinge located on the stub wing's lower surface, through which a locking pin would pass to lock the wings into position. A black electrical terminal panel was placed inside the outer wing panel between the hinges. An electrical wire bundle was located within the curved fitting ahead of the aft hinge. (Dann)

The aft wing fold hinge had an N-shaped cross section that pivoted near the wing upper surface. The rear hinge was connected to the wing fold actuation cylinder, which extended or folded the wings. The hydraulically operated wing folding mechanism was operated from the Skyraider's cockpit. The nylon wing fold area cover was installed on this aircraft. (Barthelmes)

The Skyraider's flaps were located on the trailing edges of the inboard wing sections, while the ailerons were fitted to the outboard wing sections. Immediately forward of the aft wing hinge was the electrical wiring bundle serving the outer wing. The wing fold actuator sat span wise in the wing and moved out to fold the outer wing panel. (Dann)

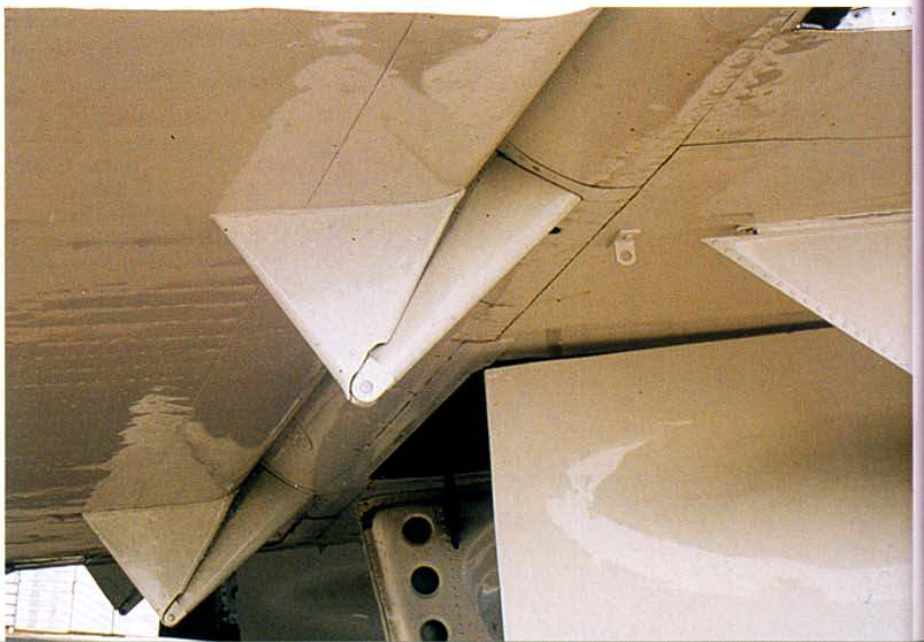


When the Skyraider's wings were folded, red jury struts were installed between the fuselage and the outboard wing panel. These struts supplied additional support and reduced stress on the wing fold hinge. The jury strut ends fitted into flush-mounted receptacles in the outer wing upper surface and the forward fuselage. (Dann)

The Skyraider had six weapon stations on each outer wing panel; three Aero 14 pylons were fitted on this aircraft. The outboard wing stations could carry 500 pounds (226.8 KG) per rack; however, total capacity was limited to 2500 pounds (1134 KG) per outer wing panel. The narrow rectangular slot near the two inboard pylons was the outboard 20MM cannon shell casing ejector chute, with the smaller link ejection chute beside the casing chute. (Dann)

The pitot tube – used to collect air pressure for the pilot's airspeed indicator – was fitted under the starboard outer wing. This tube was equipped with a heating element to prevent ice build-up, which would have produced incorrect airspeed information. The pairs of pins and holes on the wing were electrical connection points for wing-mounted rockets. (Dann)

Each flap was attached to the stub wing using two externally mounted hinges. The forward hinge section was fixed to the wing, while the aft section moved with the flap. The Skyraider had hydraulically actuated flaps located on the stub wing only. The flaps were deflected 25° for takeoffs from land and the full down setting of 40° was used for carrier and minimum run takeoffs. This 40° setting was also used for landings, including recovering aboard a carrier. (Dann)

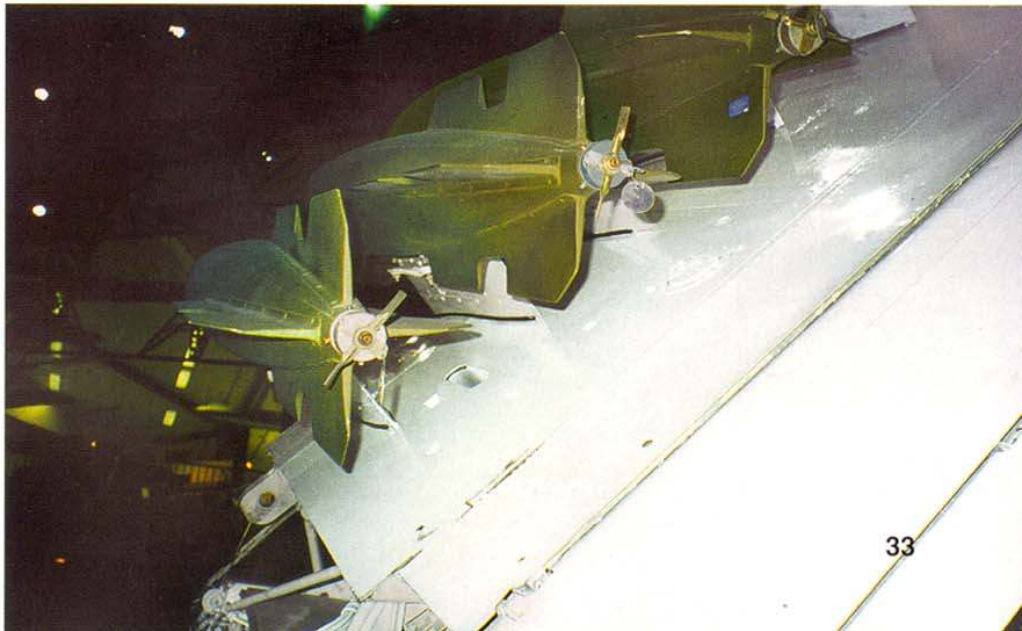


VA-25 personnel aboard the USS MIDWAY (CVA-41) prepare this A-1H for a mission sometime during 1965. Armorers have loaded 500 lb (226.8 KG) Mk 82 Low Drag General Purpose (LDGP) bombs onto Aero 14E bomb racks fitted to the outboard pylons. The bombs' fuses were safety wired to the rack. This wire broke when the bomb was released, allowing vanes on the bomb's nose to spin and arm the weapon. (Tailhook Assn.)

During 1965, this VA-25 A-1H aboard the USS MIDWAY was loaded with a toilet on the starboard outboard (number 12) weapons rack. A fuse assembly was fastened to the toilet's front and a fin assembly was mounted on the toilet's rear. It is believed the Skyraider dropped this toilet with its other ordnance on an enemy target in Vietnam, but no other details are available regarding this episode. (Tailhook Assn.)

Bombs were loaded onto the folded port wing of an AD spotted on an unknown aircraft carrier during the early 1950s. Two 500 (226.8 KG) pound bombs were placed on the inner pylons, while three 250 pound (113.4 KG) bombs were located on the outer pylons. Two five inch (12.7 CM) rockets were mounted on the starboard folded wing of a nearby Skyraider. (via Dann)

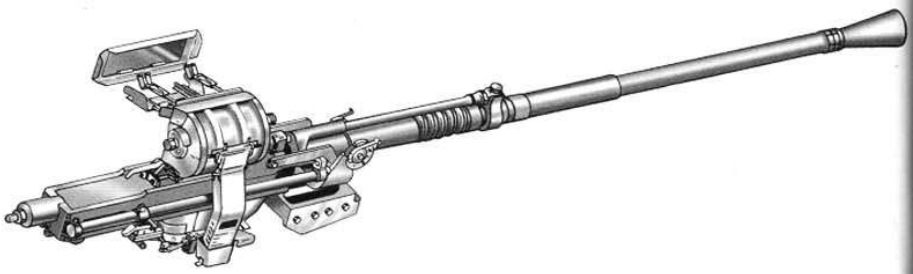
Three 500 lb Mk 82 LDGP bombs were installed on the folded outer port wing of this displayed Skyraider. A two-bladed fuse was placed at the aft end of each bomb and attached with a safing wire to the bomb rack. This wire was severed upon the bomb's release from the aircraft, allowing the fuse blades to spin a predetermined number of revolutions to arm the weapon. (Detail & Scale/Bert Kinzey)



(Below) An AD-6 (BuNo 134522) was displayed with weapons on all hard points on 16 May 1959. The TX-8 test shape – the inert version of the MK 7 nuclear weapon – was mounted on the centerline rack using the T-28 saddle device. This shape measured 15 feet (4.6 M) long, 31.5 inches (80 CM) wide, and weighed 1700 pounds (771.1 KG). The AD-4B, -6 and -7 were equipped to carry and release nuclear weapons, called 'special stores' in their flight manuals. The inboard wing pylons held 500 lb bombs, while the outboard pylons were loaded with either 250 lb (113.4 KG) bombs or 5 inch (12.7 CM) rockets. (Douglas)

(Above) This A-1H (AD-6) was loaded with ordnance on all 15 external hard points. Three Multiple Ejector Racks (MERs) with six 500 lb Mk 82 LDGP bombs per MER were loaded onto the centerline Aero 3A pylon and the Mk 51 inboard wing pylons. LAU-68/131 rocket pods – each holding seven 2.75 inch (70MM) Folding Fin Air Rockets (FFARs) – were fitted to the 12 outer wing pylons.

20MM M3 Cannon

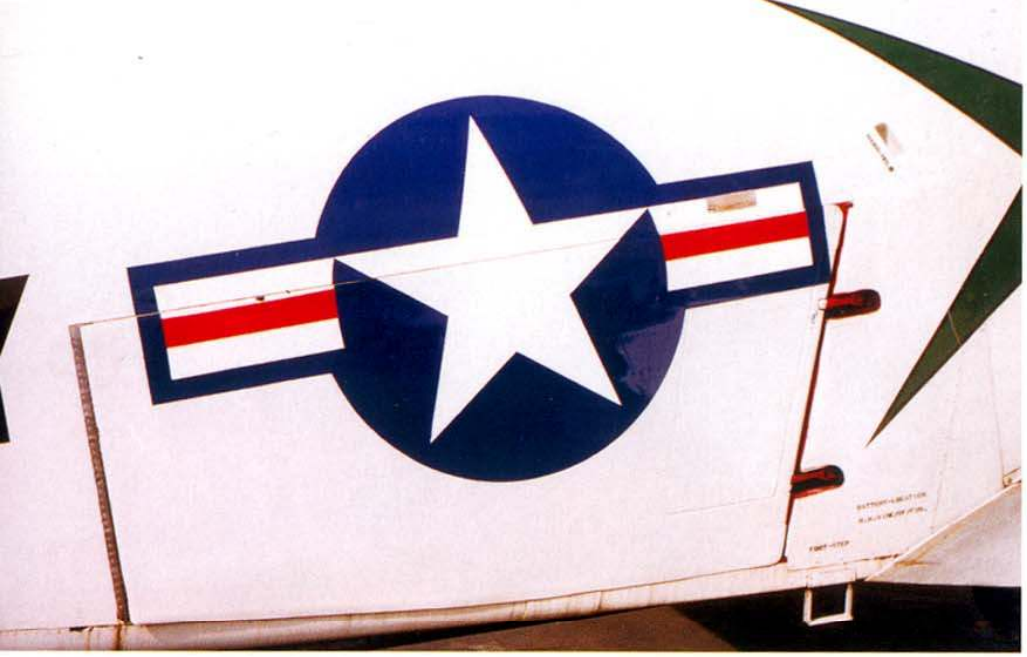


BLU-1 Napalm Bomb

The pilot of this A-1H (AK-506, BuNo 139820) assigned to VA-145 on the USS INTREPID (CVA-11) has extended his speed brakes to slow down the aircraft. The three speed brakes – one on each fuselage side, and a third on the fuselage undersurface – were hydraulically operated. The lower brake was wired shut when a centerline external fuel tank was carried. (Tom Hansen via Mutza)

The underfuselage speed brake was lowered on this AD-6 (BuNo 139811) under construction at the Douglas factory in El Segundo, California. The fuselage side speed brakes are in the closed position. The folded wing of another Skyraider has obscured the lowered tail hook on 139811. A3D (later A-3) Skywarriors were being built alongside the Skyraiders. (Boeing Historical Archives)

This Skyraider's underfuselage speed brake was lowered 40° during testing at an aircraft maintenance facility. A soda bottle crate was used to prevent the speed brake from hitting the factory floor. The cavity placed in the speed brake's inner surface provided clearance for the actuation cylinder when the brake was retracted.

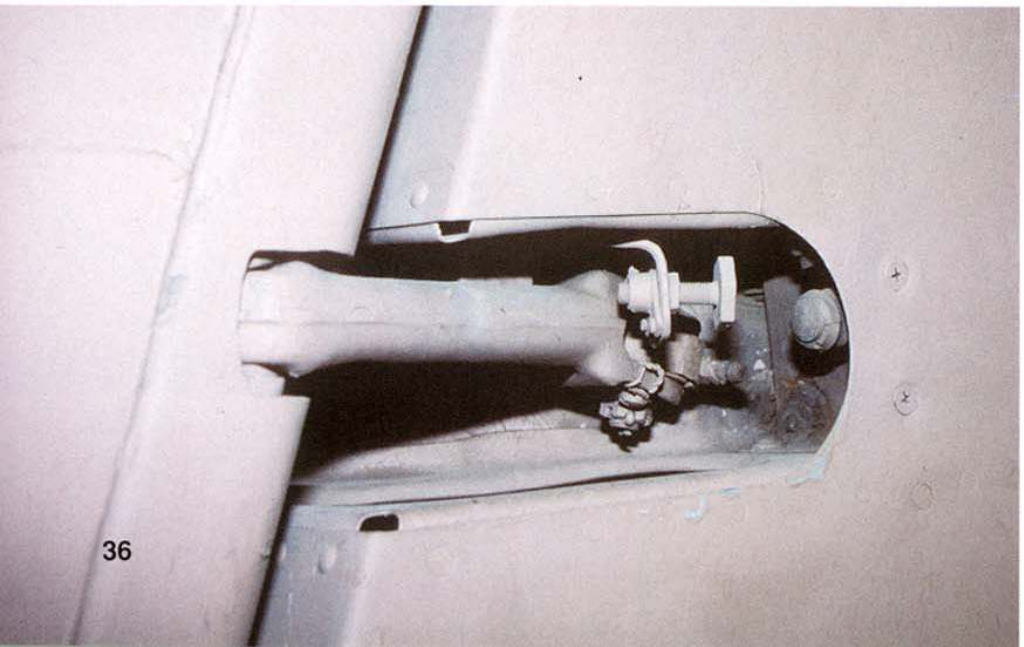


The speed brakes fitted flush with the fuselage surface and swung on two forward-mounted hinges. Speed brake deployment on the ground was prevented through a solenoid safety switch mounted on the main landing gear. A flush-mounted formation light was placed just above the upper edge of the speed brake. The starboard cockpit entrance step was mounted on the fuselage below the lower speed brake hinge. (Dann)

Two forward-mounted hinges were attached to each fuselage side speed brake. The upper port speed brake hinge contained a switch connected to the Skyraider's horizontal stabilizer. Full extension of the speed brakes brought the horizontal stabilizers to zero incidence (neutral position), preventing handling problems with the aircraft. (Barthelmes)

Single-seat Skyraiders were fitted with three speed brakes, one on each fuselage side and a third brake on the fuselage bottom at station 220. The actuation cylinder was removed from this aircraft; this cylinder normally connected the speed brake's inner surface with the fuselage. The cavity inside the speed brake well allowed the brake to fit flush with the fuselage. Fuselage speed brakes extended 45°. (Barthelmes)

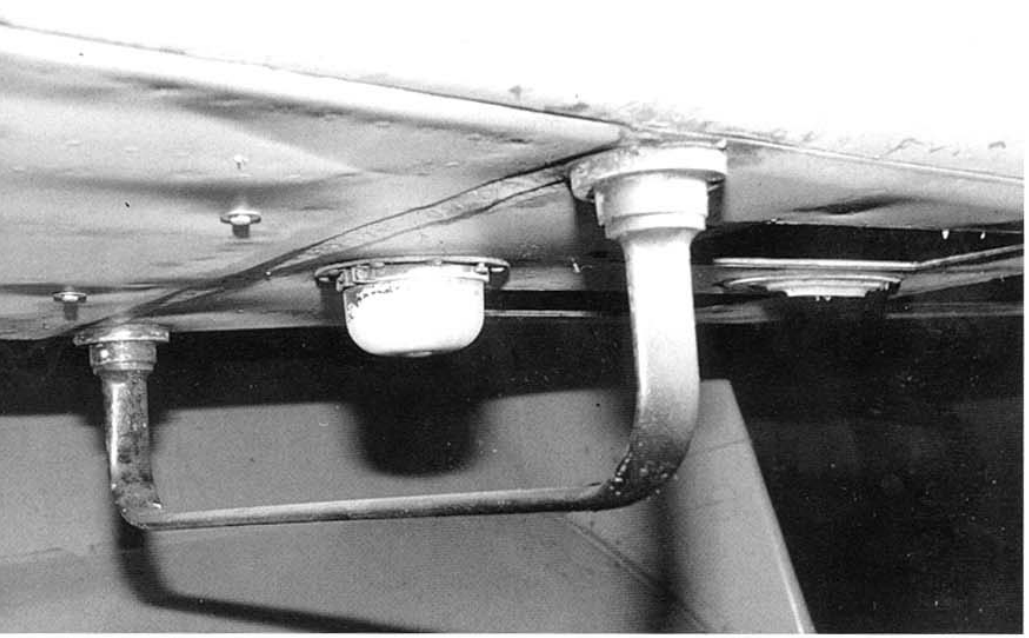
The lower speed brake was attached to the fuselage using two hinges at the brake's forward edge. The front of the speed brake well was tapered in to eliminate buffeting when these brakes were extended. A permanently extended boarding step was mounted on both sides of the fuselage just aft of the wing flap, while the marker position light was fitted to the fuselage centerline at station 240. (Barthelmes)



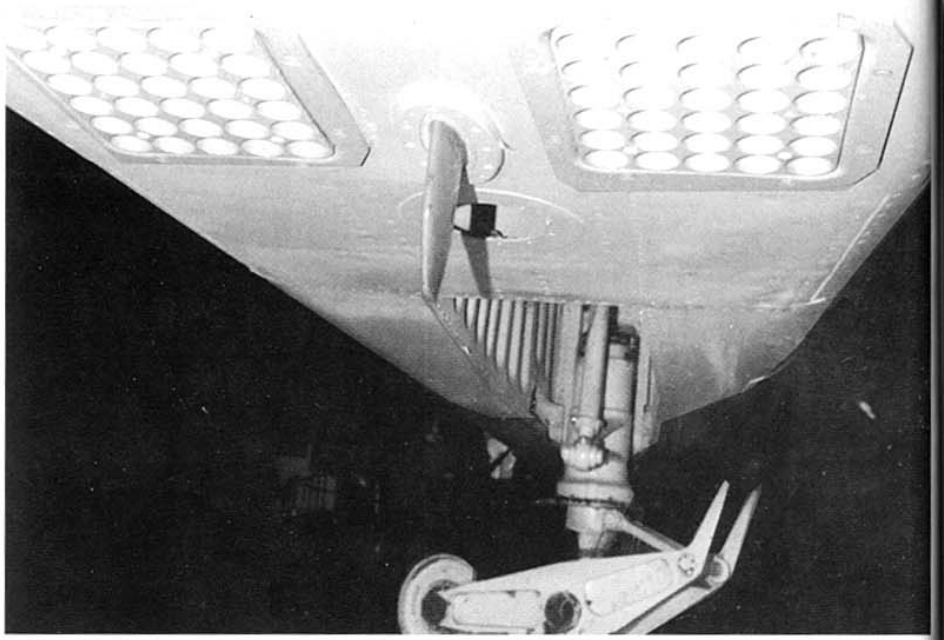
This early XBT2D-1 (BuNo 9102) lacked the hooked extension placed at the rudder's base beginning with the AD-3. The vertical tail assembly was also slightly shorter than those found on later Skyraiders. All-metal rudders, elevators, and ailerons were standard on all Skyraider variants. These control surfaces were painted Gloss White (FS17875) on the Light Gull Gray (FS36440) over White color scheme. (Barthelmes)

The Skyraider lacked elevator trim tabs found on many aircraft, and accomplished longitudinal (nose to tail) trim by moving the entire horizontal stabilizer. This was done electrically via a control on the cockpit port console near the fuel selector switch. A pressure switch disabled stabilizer trim in the nose-up range at speeds over 200 MPH (321.9 KMH). The elevators and rudder were mechanically operated. (Dann)

This A-1H (AD-6)'s rudder features the hooked extension at its base, which provided increased rudder surface area. The spring tab on the upper rudder trailing edge moved in the rudder's opposite direction to reduce cockpit control forces. The trim tab was directly below the spring tab. The pilot could adjust the trim tab using a control on the cockpit port console. The tail-mounted static boom – introduced on the AD-2 – collected static air pressure for the altimeter and several other instruments. (Dann)



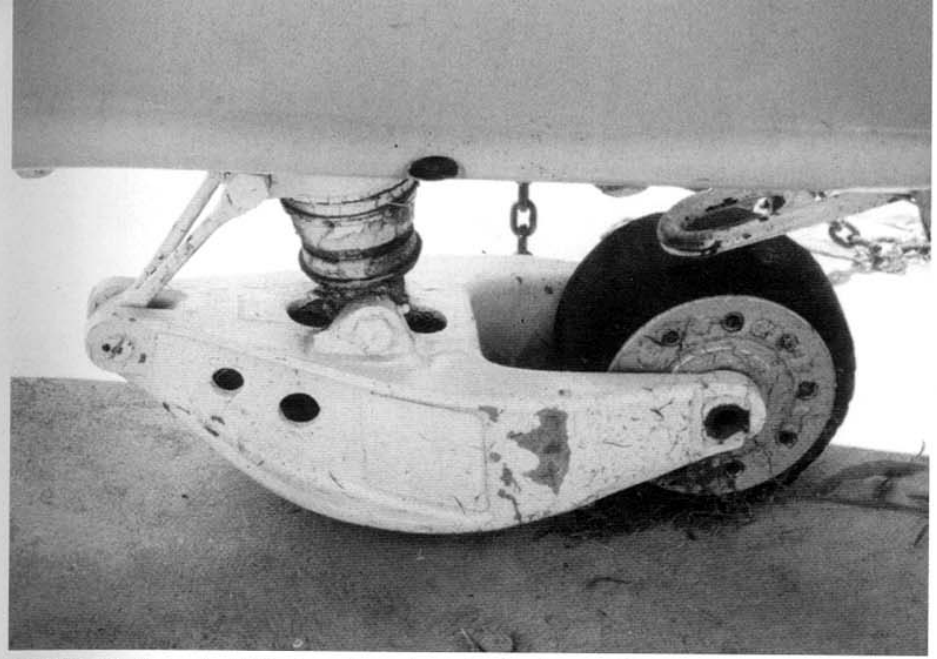
A VHF-FM (Very High Frequency-Frequency Modulation) radio antenna was fitted to the lower fuselage of some A-1H/Js, immediately aft of the ventral speed brake. This VHF-FM antenna was used for two-way voice communications and had line-of-sight range. The antenna's two arms straddled a white formation light. (Barthelmes)



A flare/chaff dispenser system was installed on the aft fuselage undersurface forward of the tail wheel on late A-1s. This system – activated by a switch on the pilot's control stick grip – countered the threat of heat seeking and radar guided missiles developed during the Vietnam War. The AN/APX-6 IFF (Identification Friend or Foe) blade antenna was mounted between the dispensers. (Barthelmes)

An Aviation Boatswain's Mate receives instruction on attaching the catapult holdback on this AD-4NA (BuNo 125739). A holdback fitting was designed to break when the catapult reached the proper amount of tension. This release allowed the catapult shuttle attached to the bridle to speed down the deck and launch the aircraft. The radio altimeter antenna was mounted immediately forward of the elevator's leading edge. (US Navy)

The AN/APN-22 radio altimeter receiver-transmitter was placed on the lower surface of the port horizontal stabilizer, forward of the elevator's leading edge. This antenna sent radio waves bouncing off the land or water surface and measured the difference in the returned waves' frequency. This information determined the aircraft's height above ground level. (Barthelmes)

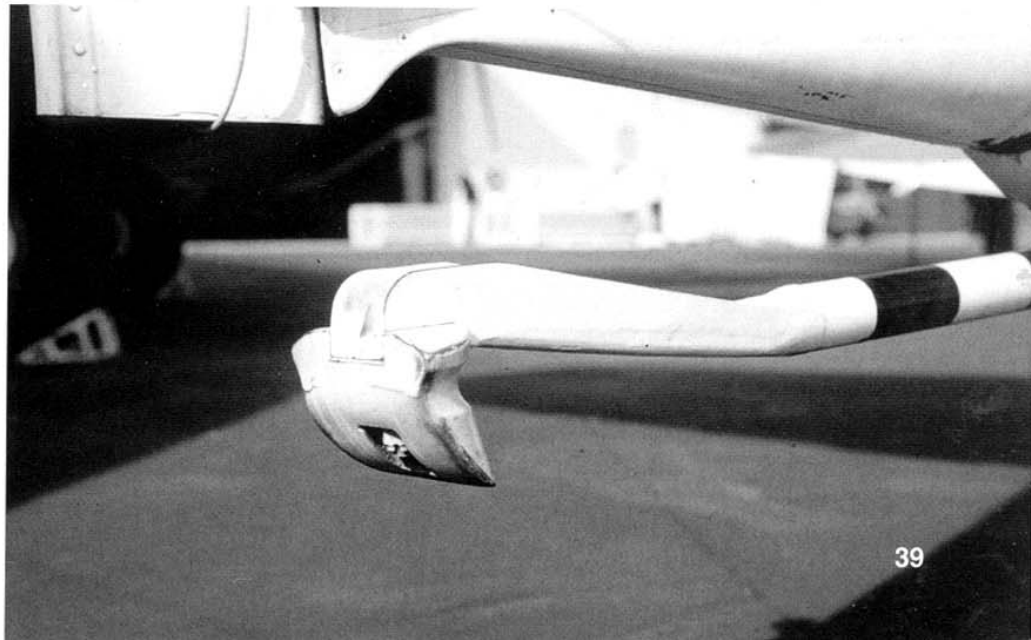


The XBT2D through AD-2 aircraft used a tail wheel assembly that featured a cast yoke attached to the shock strut. The wheel was mounted within the yoke's arms while the forward torque link connected the yoke's front with the shock strut. The torque link's position limited the tail wheel's retraction stroke, resulting in a semi-retractable wheel assembly. (Barthelmes)

The Skyraider could have its solid rubber tail wheel tire replaced with an inflatable tire for land-based operations. Inflatable tires were better suited to operating from a variety of ground-based landing fields than solid tires. This tire was most commonly seen on Air Force variants of the Skyraider. The torque link arms connected the tail wheel strut with the wheel yoke. (Dann)

The fully retractable tail wheel assembly installed on AD-3 and subsequent Skyraiders consisted of a 9.5 by 4.75-inch (24.1 by 12.1 CM) solid rubber wheel mounted on a cast aluminum hub assembly. The tail wheel was non-steerable but fully castering through 360° and could be locked in the trail position. Solid rubber tires were used for shipboard operations, due to their greater absorption of recovery stresses. (Barthelmes)

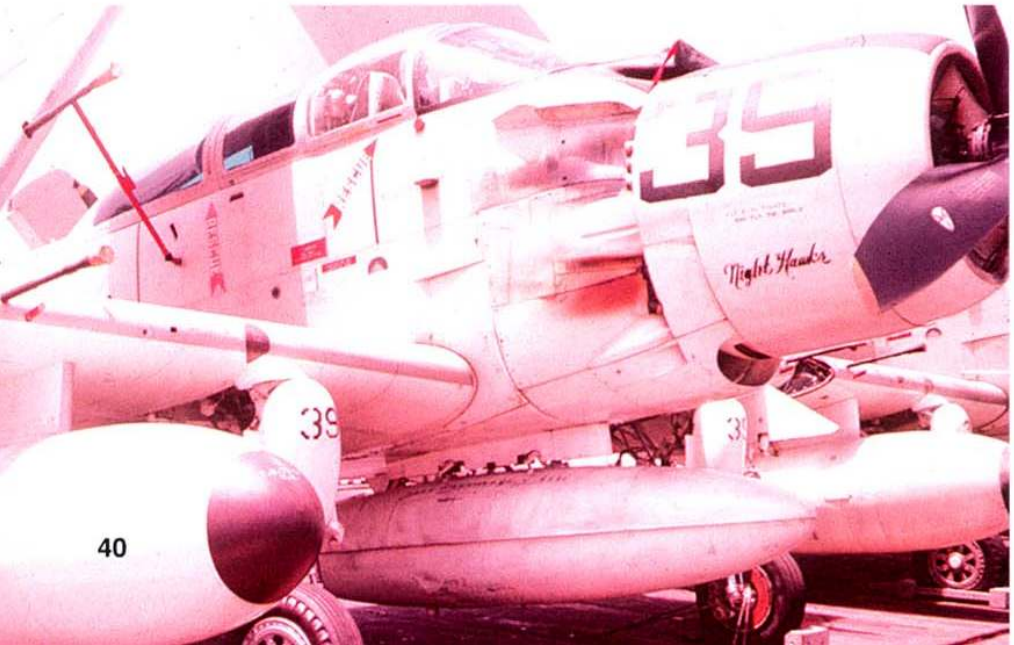
The Skyraider's tailhook was mechanically extended for recovery aboard ship and hydraulically retracted. This hook was mounted under the rudder and grabbed the arresting cables laid across the aft section of a carrier's flight deck. The tailhook was painted in alternating black and white 4-inch (10.2 CM) stripes for easy visibility by deck crews. A-1s recovered aboard carriers at 90 knots (103.6 MPH/166.7 KMH). (Dann)



This AD-5N (A-1G, BuNo 132636) wore the markings of the Naval Air Reserve Training Unit (NARTU), based at Naval Air Station (NAS) Anacostia, District of Columbia. The aircraft was finished in Light Gull Gray (FS36440) over Insignia White (FS17875). The International Orange (FS12197) faded badly on the AD's rear, while the same color on the cowling stood up well. The forward half of the Skyraider's wing was also painted International Orange. The Flat Black (FS37038) paint on the fuselage sides was used to hide the exhaust stains, which reduced cleaning time. (Tailhook Assn.)

An AD-5Q (EA-1F) assigned to Composite Squadron 33 (VC-33) is parked with its wings folded. This aircraft was unusually clean with little exhaust staining. The open nose flap position indicator protruded from the upper engine cowling. The black stenciling under the large number 39 on the cowling read: FLY WITH PILOTS AND FLY THE WORLD. VC-33's nickname *Night Hawks* was painted on the lower engine cowling. (Tailhook Assn.)

This AD-5 (BuNo 133867) is adorned with the markings of Naval Air Reserve Aircraft based at NAS Minneapolis, Minnesota. The NAVY and MARINE aft fuselage titles were worn by reserve aircraft used by both services. This Skyraider was painted Light Gull Gray on the uppersurfaces and Insignia White on the undersurfaces and control surfaces. International Orange was painted on the engine cowling, forward wing, lower aft fuselage, and tail.

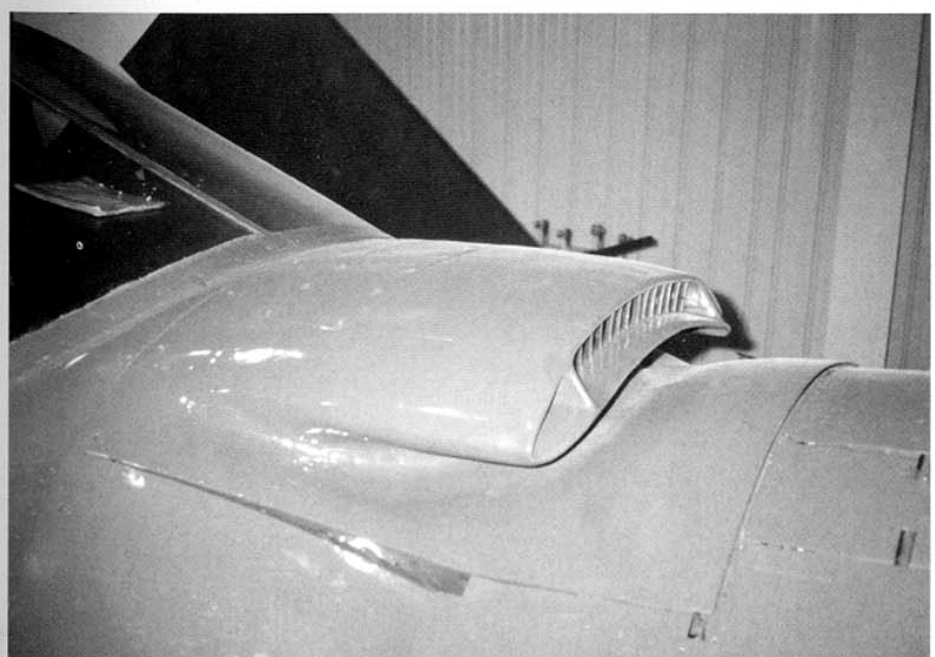


This Douglas EA-1F (BuNo 132532) was parked with engine cowl and forward fuselage panels removed at Davis Monthan Air Force Base (AFB), Arizona on 13 November 1971. Engine accessory section interior surfaces were painted Zinc Chromate (FS34151), an anti-corrosion finish. Tie-down attachment points for securing the aircraft to the flight deck or ramp were placed under each wing, while the catapult holdback ring was fitted under the aft fuselage. The AD-5 (A-1E/F) crew compartment was widened by nine inches (22.9 cm) over the width of the single-seat variants to allow for side-by-side seating. The AD'5's fuselage length was also increased by 11 inches (27.9 cm) and its height increased by three inches (7.6 cm). The tail surfaces's area was increased by approximately 50 percent on the multi-seat Skyraiders. (San Diego Aerospace Museum)

This AD-5N (A-1G, BuNo 132521) night attack aircraft was assigned to All-Weather Attack Squadron 33 (VAW-33) at NAS Quonset Point, Rhode Island. This aircraft wore the code GD-822 when it flew off the Atlantic coast on 6 September 1962. A pod containing an APS-31 search radar was mounted under the starboard wing. Most multi-seat Skyraiders were armed with four 20MM M3 cannons in the wings. Exhaust stains from the Wright R-3350-26W engine extended from the exhaust stacks to the mid-fuselage. The wing root area showed signs of paint wear, primarily from the feet of maintenance personnel walking on this area. This aircraft was one of 53 Skyraiders later converted to the AD-5Q (EA-1F) Electronic Countermeasures (ECM) configuration. US Navy and Marine Skyraiders displayed the last four or five digits of the BuNo (Bureau Number) on the vertical stabilizer, immediately above the horizontal stabilizer. (Tailhook Assn.)

The standard US Air Force data stencil indicating aircraft type, serial number, and fuel requirements was painted on the port upper fuselage of this A-1E (AD-5). This Skyraider variant employed an exterior canopy activation knob, which replaced the lever used on the 'single seat' variants. A windshield wiper was also used by the A-1E because of its wider windshield surface. (Barthelmes collection)

The AD-5 retained the carburetor inlet used by previous Skyraiders and was mounted ahead of the windshield. Primary induction air came into this inlet and passed through a filter before reaching the carburetor. Flanking the grilled carburetor inlet were smaller scoops for cabin heating and ventilation air. The strake starboard of the inlet directed airflow to the ducts. (Dann)



This pilot is using his .45 caliber M1911A1 pistol to put a mechanically-troubled AD-5 out of its misery. Production Skyraiders were fitted with a four-bladed Aeroproducts propeller, which measured 13 feet 6 inches (4.1 M) in diameter. The pilot could hydraulically change the constant speed propeller's pitch to suit operating conditions. The raised nose flap position indicator on the upper engine cowling indicated that these flaps were retracted. This indicator was introduced on the AD-4 variant. (Tailhook Assn.)

The rectangular oil cooler outlet flap was moved from the fuselage undersurface to the fuselage sides on the AD-5. This front-hinged flap opened to vent hot air out of the oil cooler. Above and aft of the vent flap is the 'kick-in' step into the cockpit, placed at the bottom of the white line leading to the cockpit edge. A fixed cockpit access step was located above and forward of the 'kick-in' step. The yellow cockpit enclosure release was in the port canopy corner. (Dann)

The AD-5 (A-1E) moved the oil cooler outlet vent to the fuselage sides in anticipation of the AD-5W (EA-1E) Airborne Early Warning variant. The AD-5W used an APS-20 radome on the fuselage undersurface, which covered the cooler outlet's normal position aft of the engine cowling. This US Air Force A-1E had the aft end of the oil cooler outlet flap painted Aluminum. (Barthelmes)

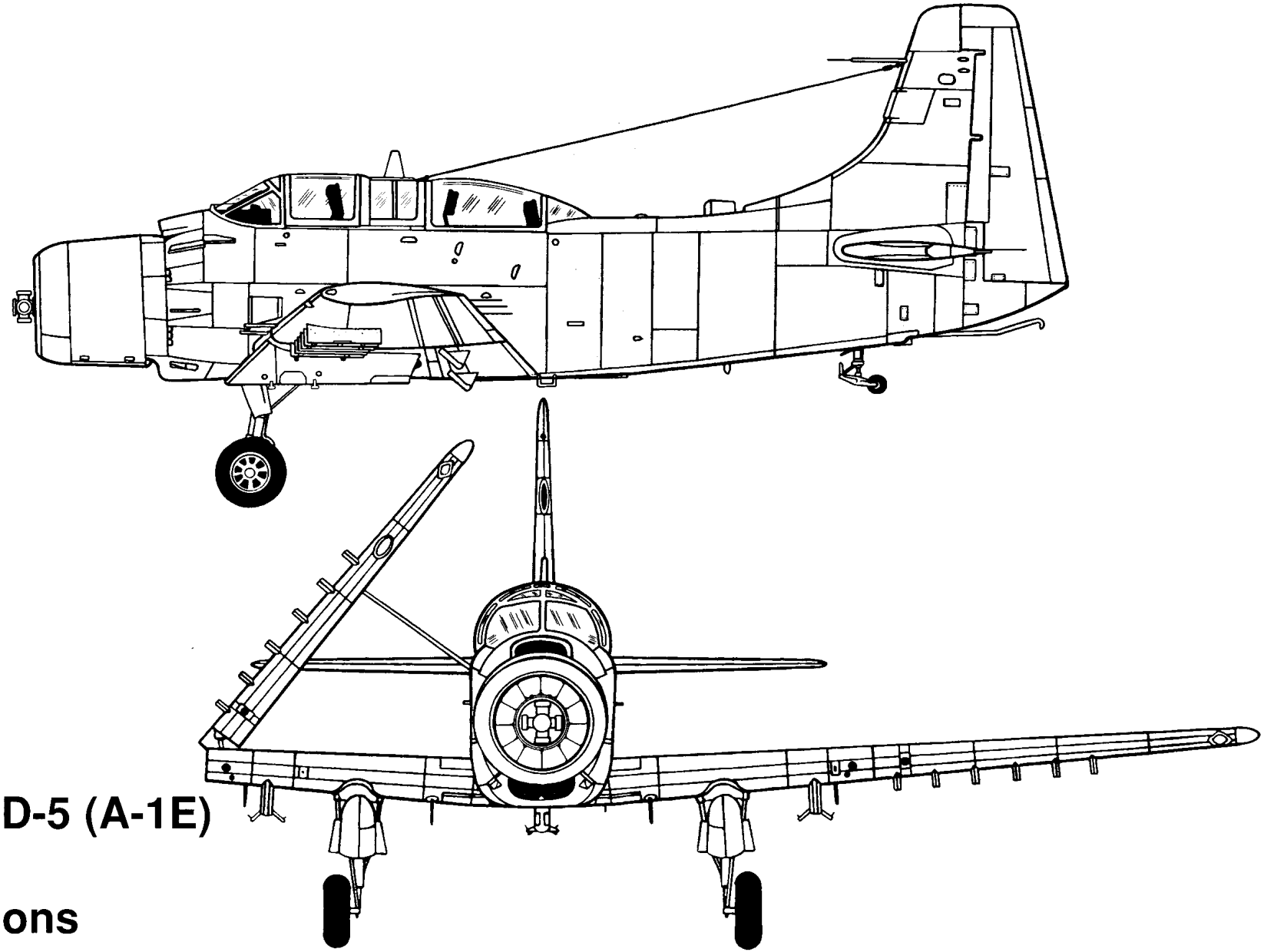
Pilot and co-pilot in the A-1E each had individual cockpit enclosures, which opened by sliding aft on their rails. Crewmen could open the canopy using the yellow handle placed inside the cabin. The Air Force usually painted the fuselage black aft of the exhausts on their overall COIN (Counter-Insurgency) Gray (FS36473) A-1Es to hide the vast amount of staining generated by the Wright R-3350 engine. (Barthelmes)

This US Air Force A-1E (AD-5) received the Southeast Asia (SEA) camouflage of Dark Green (FS34079), Medium Green (FS34102), and Tan (FS30219) over Light Gray (FS36622). This aircraft was fitted with the Yankee extraction system and displays the red and white warning triangle under the cockpit. (McGuire via Alexander)

Several Air Force-specific antennas were mounted on the aft fuselage of this A-1E. These antennas were (front-rear): the base of ARN-6 radio compass sensing antenna; an ARC-27 VHF/UHF blade antenna; a FM 622 whip antenna; and an ARN-6 radio compass loop. The red anti-collision light placed above the base of the fin-mounted pitot tube was a field modification made in accordance with Technical Order A-1-524. (McGuire via Alexander)

The aft canopy of the AD-5 (A-1E) had blue tinted glass to reduce sunlight exposure to the sensitive electronic equipment housed in the aft cabin. This led to the aft cabin's nickname of 'blue room.' A V-shaped ARN-31 glide slope and locator receiver was mounted above the cabin to receive ILS (Instrument Landing System) radio information. The small blade antenna was for the ARN-21 TACAN (Tactical Air Navigation) system. (Barthelmes)

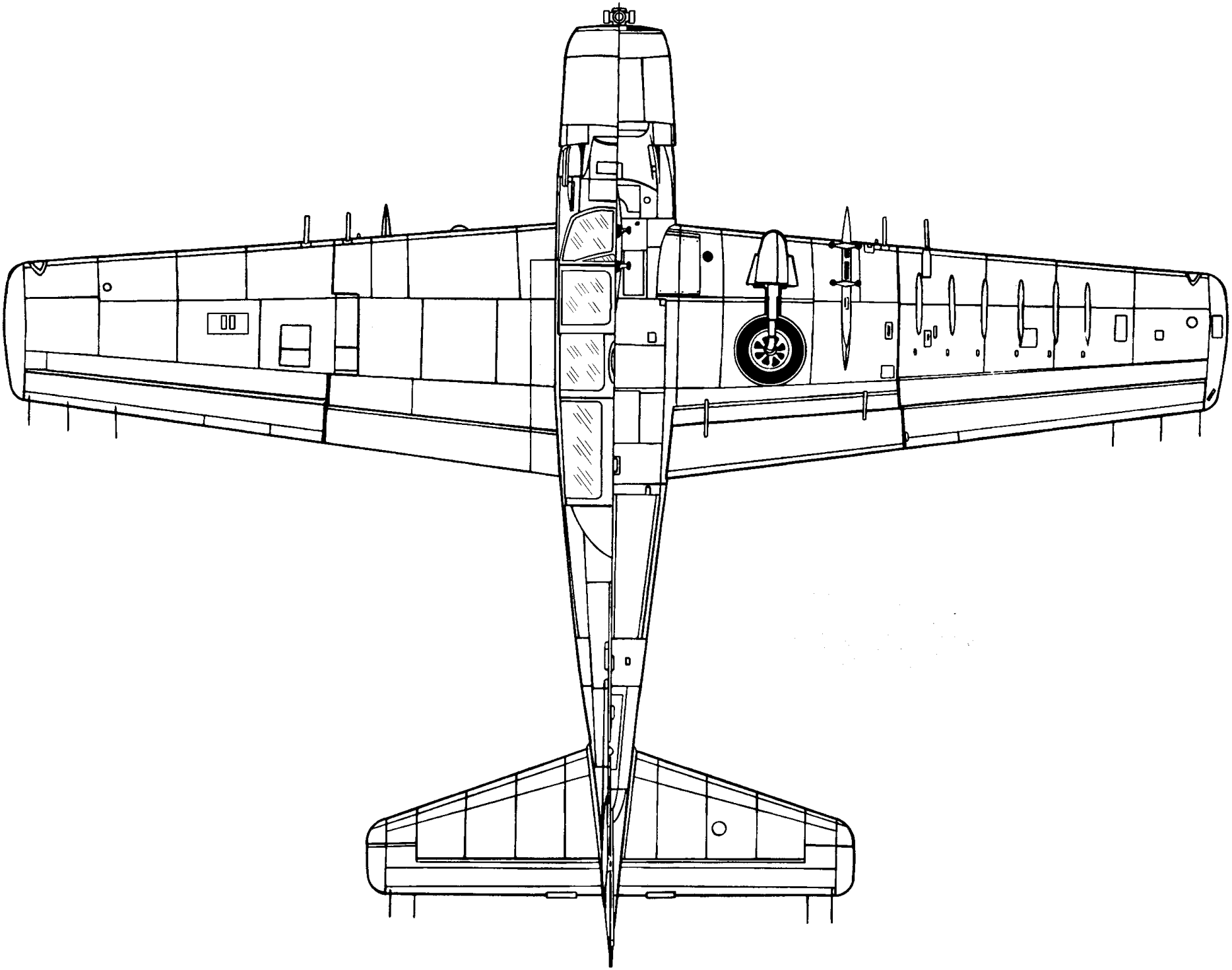
The blade antenna installed on this US Air Force A-1E served the VHF-101 radio, which was not found on Navy Skyraiders. An ARN-6 radio compass loop was housed in a black antenna fairing placed immediately forward of the vertical stabilizer's base. This radio compass was a navigation aid which allowed pilots to home on fixed ground stations. The oval opening above the national insignia was the aft compartment heater exhaust vent. (Barthelmes)



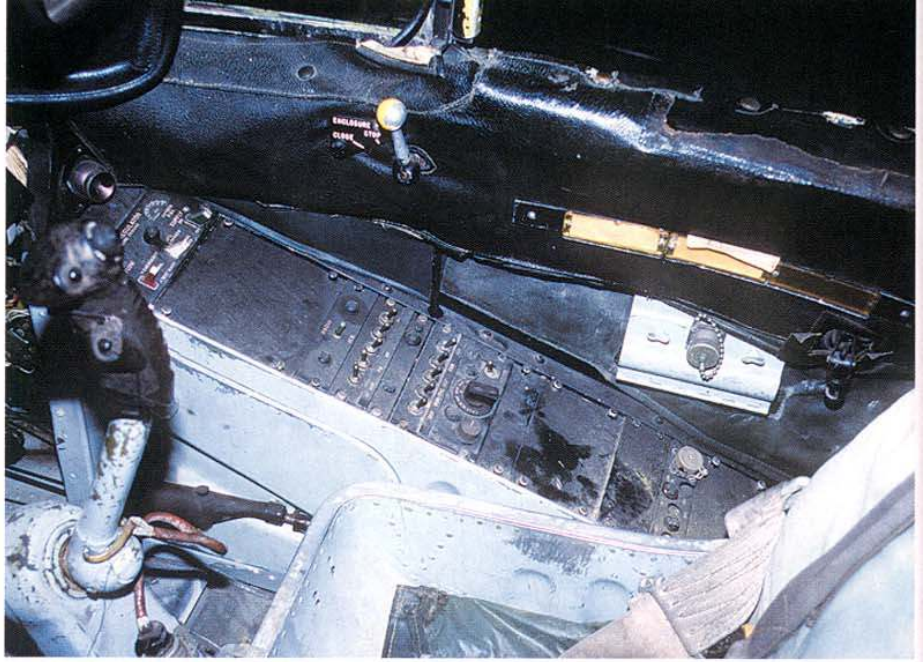
Douglas AD-5 (A-1E) Skyraider Specifications

Wingspan:.....50 feet 1/4 inch (15.2 M)
Length:.....40 feet 1 inch (12.2 M)
Height:.....15 feet 11 inches (4.8 M)
Empty Weight:.....12,313 pounds (5585.2 KG)
Maximum Weight:.25,000 pounds (11,340 KG)
Powerplant:.....One 2700 HP Wright R-3350-26WA 18-cylinder air-cooled radial engine.

Armament:.....Four 20MM M3 cannons in the wings with 200 rounds per gun. Maximum of 8000 pounds (3628.8 KG) of ordnance on 15 stations on the wing and fuselage undersurfaces.
Maximum Speed:...311 MPH (500.5 KMH)
Service Ceiling:.....26,000 feet (7924.8 M)
Range:.....1202 miles (1934.4 KM)
Crew:.....Two (typical)



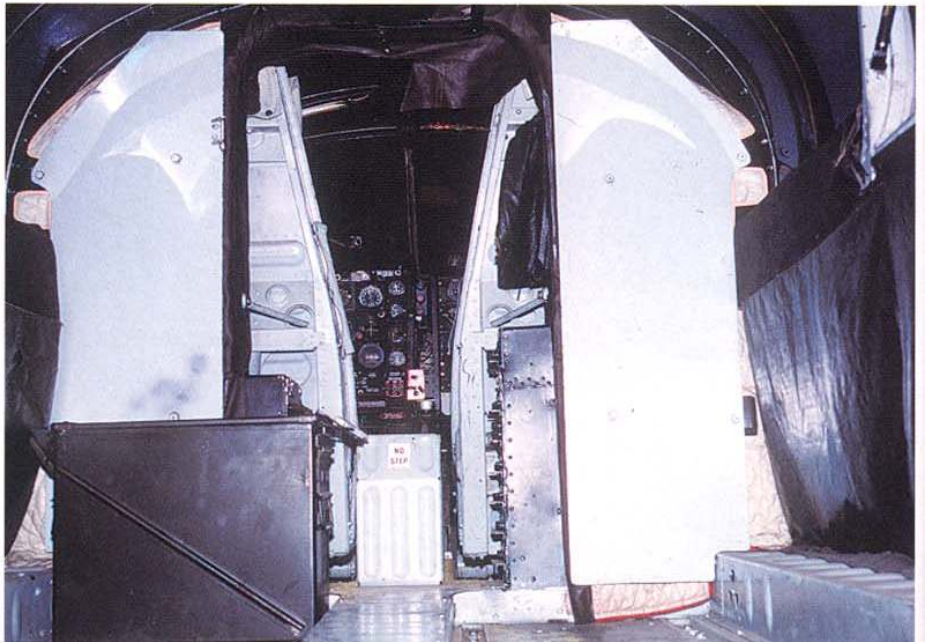
The US Air Force modified the A-1Es they received from the US Navy to include dual flight controls – adding controls and instruments to the starboard side of the cockpit. The round-knobbed co-pilot's throttle was mounted on the starboard side of the center console, which also held radio controls and engine start switches. (Barthelmes)



The co-pilot's starboard console in the Air Force A-1E contained the personal oxygen and communications control consoles. Mission specific equipment was field-installed in place of the blank console panels. The starboard canopy actuator lever was mounted on the cockpit wall between the console and the canopy sill. Another lever was mounted on the port cockpit wall for the pilot's enclosure. (Barthelmes)

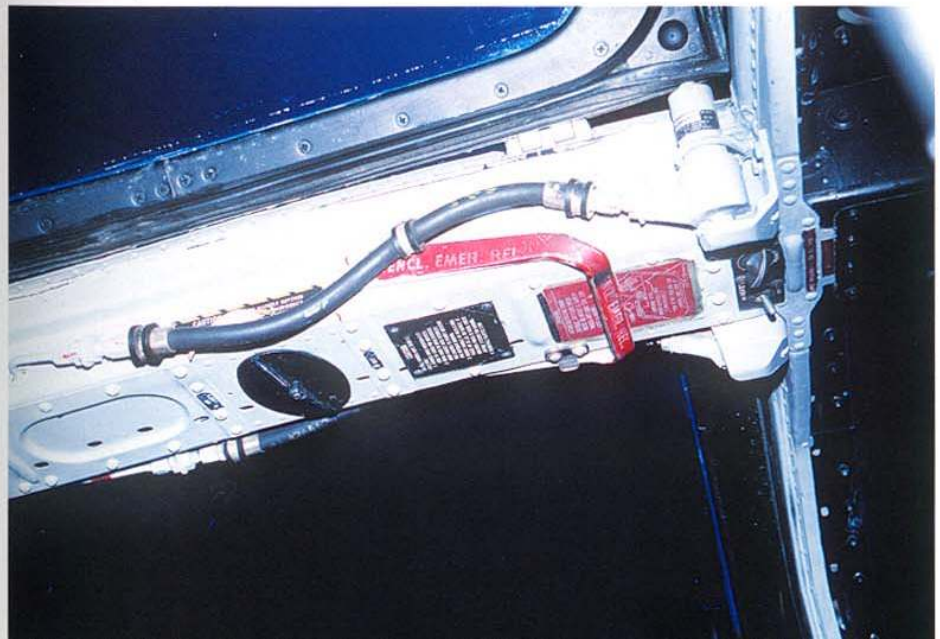
The pilot's port console was similar in both Air Force and Navy A-1E (AD-5) aircraft. This console contained the controls for power, trim, fuel distribution, and the hydraulic system; single place Skyraiders also had these controls placed on the port console. The console commonality improved transitioning from one A-1 variant to another variant. (Barthelmes)

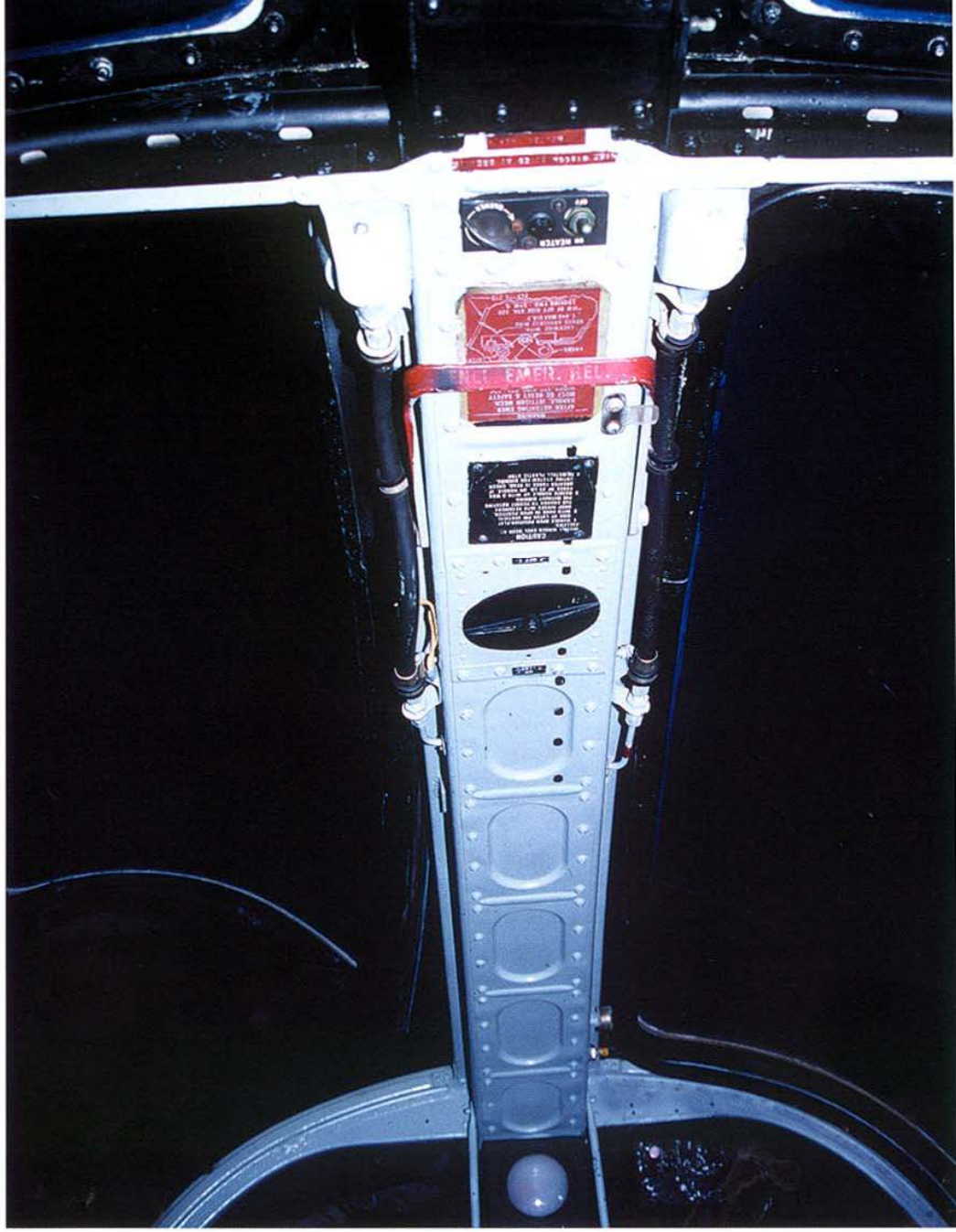
The A-1E had a spacious compartment aft of the cockpit, which had room for personnel or equipment. Circuit breaker panels were mounted behind both the pilot's and the co-pilot's seats in front of the rear compartment main bulkhead. Seat stabilization rods were connected to flanges, which protruded from the main bulkhead. The A-1E's primary interior color was Dark Gull Gray (FS36231). (Barthelmes)



The port and starboard canopy enclosures of all A-1E series aircraft were separated by a center beam. Canvas instrument covers were attached behind the instrument panel glare shields to prevent foreign objects from damaging the flight instruments. An AN/APS-31 radarscope was located in front of the starboard seat, where the ECM (Electronic Counter Measures) operator sat. (US Navy)

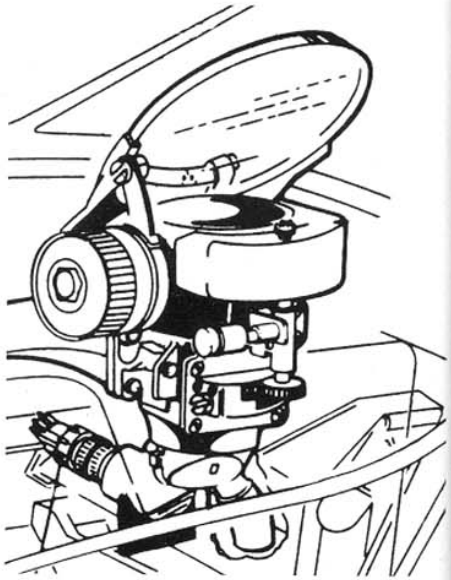
The red aft enclosure emergency jettison handle straddled the center beam of the A-1E's aft enclosure. Enclosure position sensor switches were placed on the beam's lower surface. The A-1E's aft compartment enclosures were jettisonable in the event of an emergency, which allowed crewmen inside this compartment to easily escape from the aircraft. (Barthelmes)



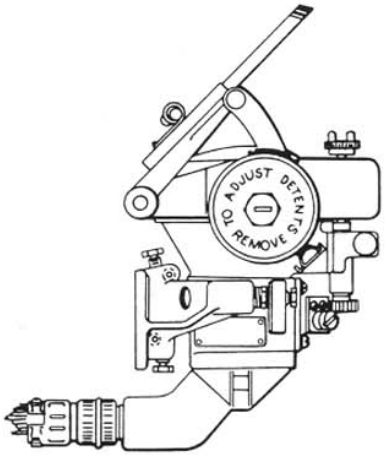


The aft enclosure's center beam supported the port and starboard hinged enclosures. The black disc on the beam's interior surface contained the aft compartment vent control, while the compartment's temperature control panel was placed immediately forward of this disc. The emergency jettison handle for each enclosure was located on the center beam. (Barthelmes)

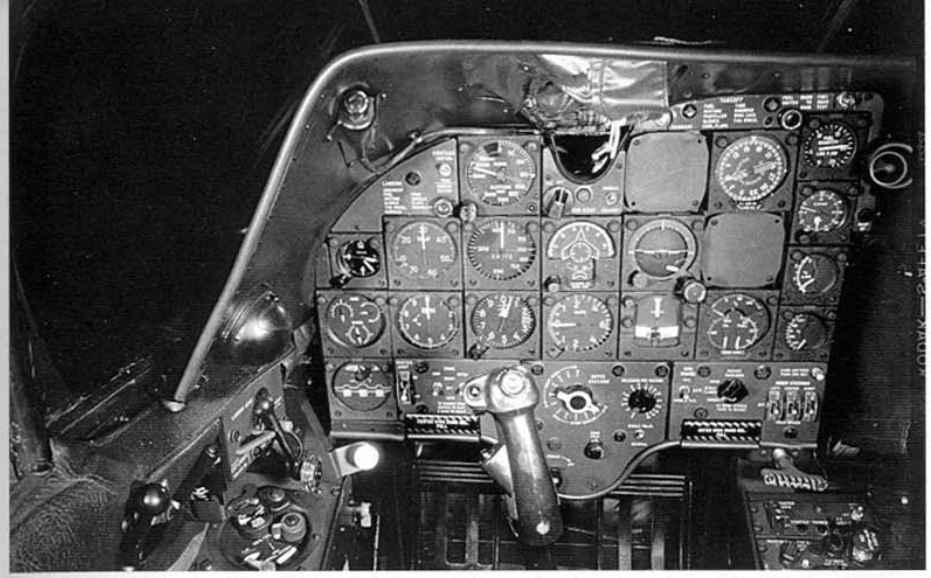
Mk 20 Mod 4 Sight



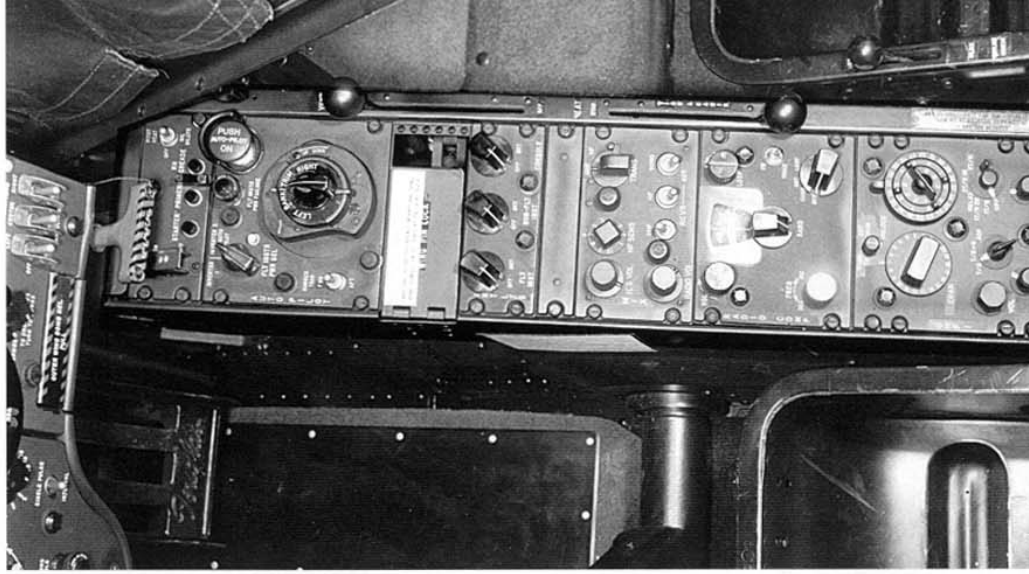
Sight Profile



The cockpit of this A-1G and other Air Force multi-place Skyraiders was fitted with dual flight controls. The primary pilot sat in the port seat and had a full set of flight instruments, including the armament selector panel. The Mk 20 Mod 4 gunsight was mounted on the port instrument panel's coaming; this sight was introduced on the AD-4, replacing the Mk 18 used on previous Skyraiders. The AD-3W/-4W/-5W variants were not fitted with a gunsight. The co-pilot's flight instrumentation was limited to an airspeed indicator and an attitude indicator. The port section of the co-pilot's panel held the radio suite and some basic system instruments, including a voltmeter and external fuel selector. An external fuel quantity gauge was mounted above the co-pilot's instrument coaming. (Gann/Douglas)



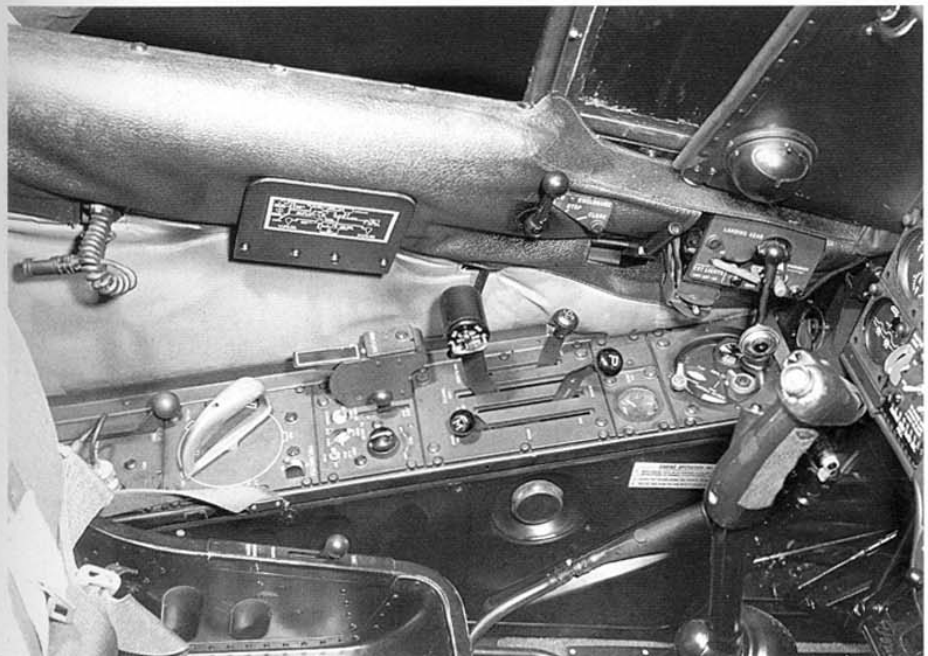
The port section of the AD-5W's instrument panel held the pilot's flight and armament instruments. Spaces for two instruments were blanked off on this aircraft. Two rectangular emergency release handles were placed on the armament panel's lower edge. The port handle was the Center Wing Bomb Release, while the starboard lever was the Outer Wing Bomb Release. (Boeing Historical Archives)

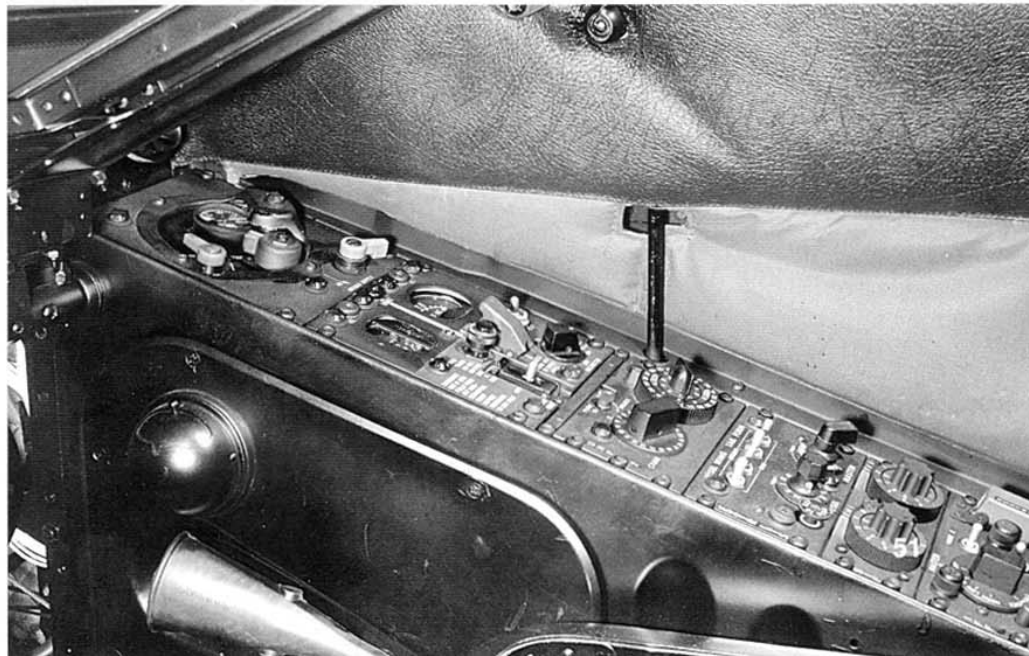


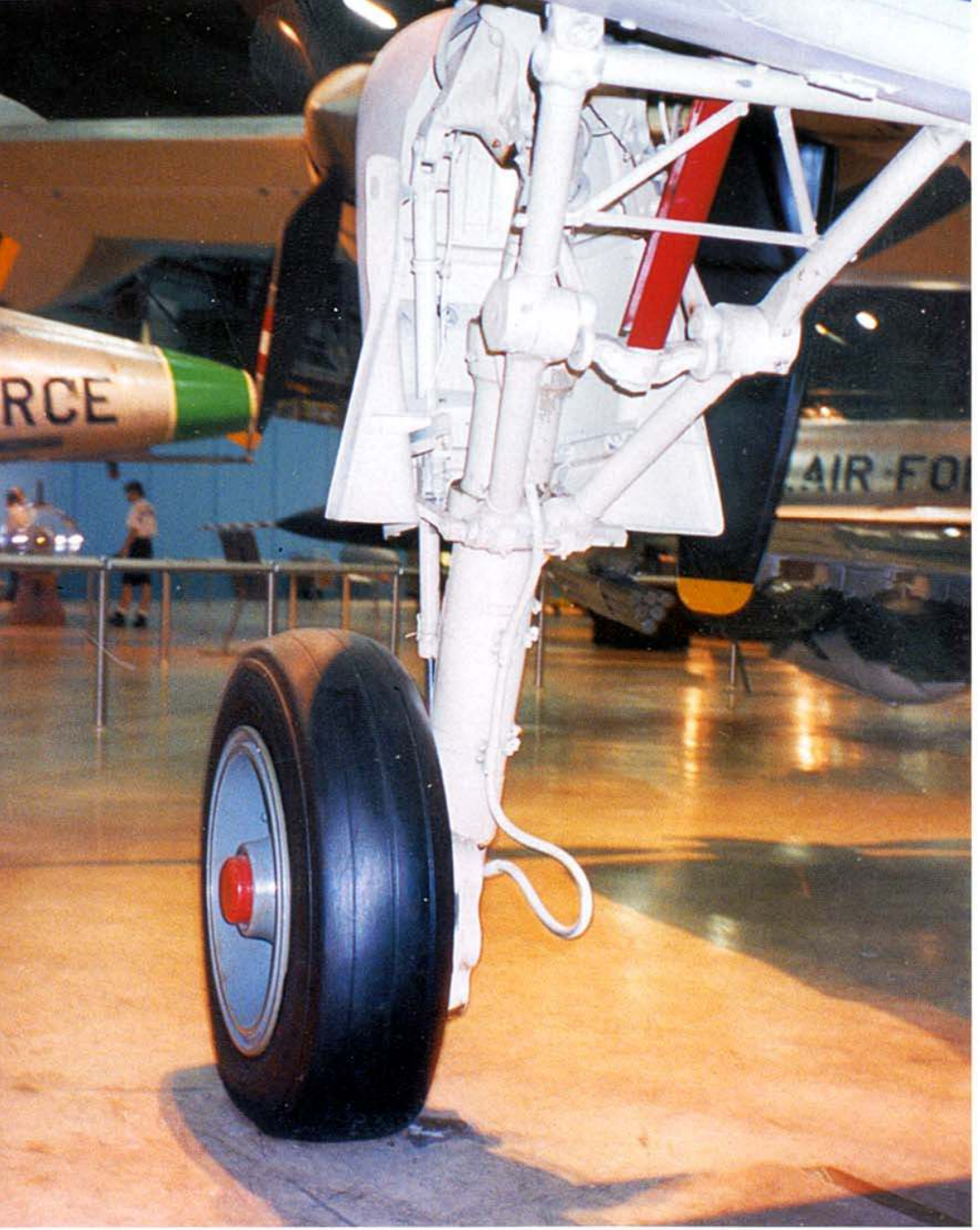
Radio and flight controls were placed on the AD-5W's center console. The autopilot release handle was located just forward of the center console. The UHF (Ultra High Frequency) 1 radio was placed on the console's front end, followed by the radio compass, ICS (Intercom System) and radio controls, instrument light controls, wing fold, and autopilot. The engine starter and primer switches were placed at the console's aft end. (Boeing Historical Archives)

The fuel selector was placed at the aft end of the AD-5W's port console. Immediately ahead of this valve were controls for the trim, cowl flaps, oil cooler, and carburetor air source. The throttle, mixture, propeller, and supercharger controls were located in the center, with the pilot's oxygen controls placed at the front. The landing gear handle was just above the oxygen control panel, while the small sphere above the landing gear handle was an ashtray. (Boeing Historical Archives)

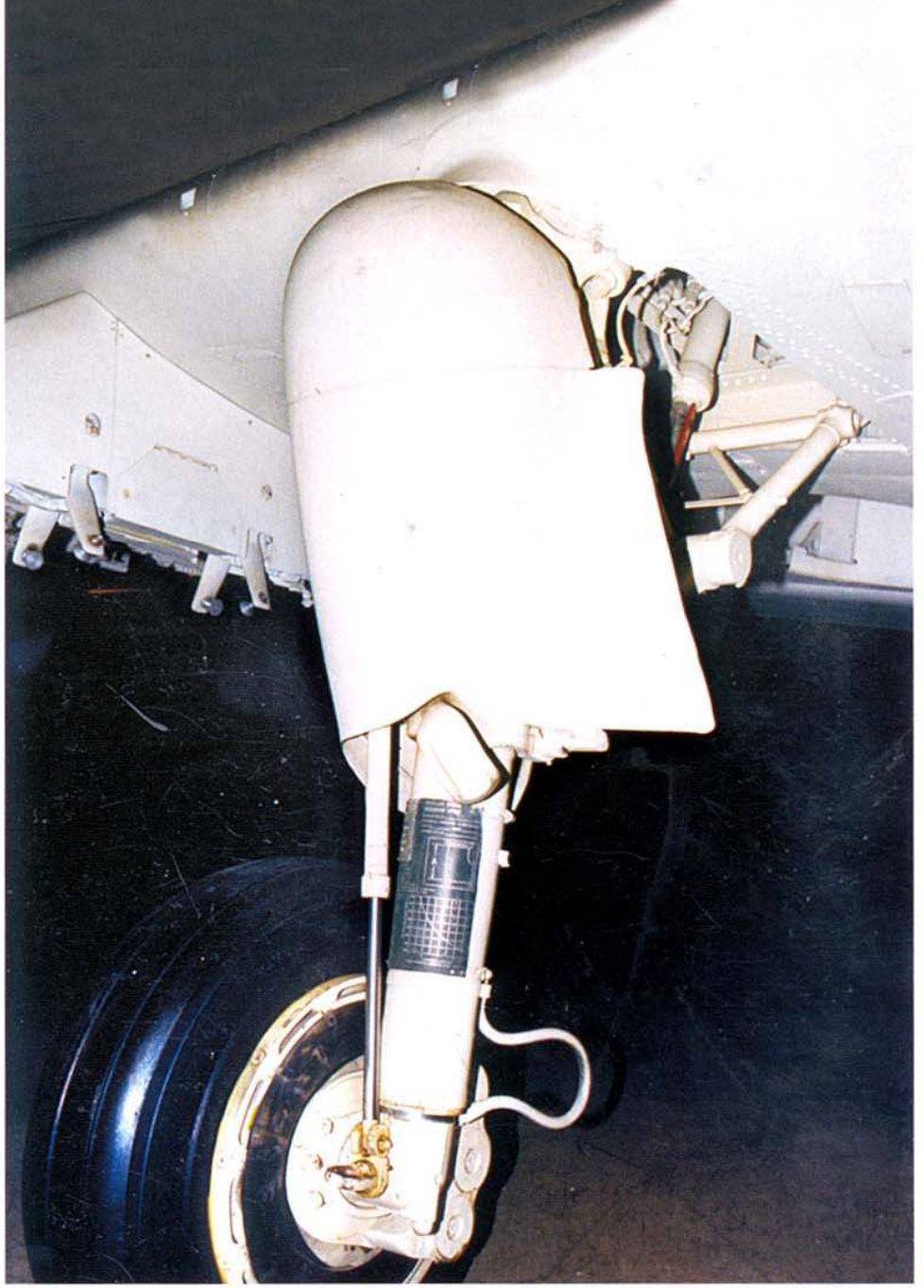
The radar officer's oxygen control panel was placed at the front end of the AD-5W's starboard console. Generator and electrical system controls were fitted immediately aft of the oxygen controls, followed by controls for the UHF 2 radio and external lighting. The IFF/SIF (Identification Friend or Foe/Selective Identification Feature) controls were fitted on the console's center section, followed by controls for external lighting and the master radio/ICS controls. Just below the ashtray was the relief tube in its stowed position. (Boeing Historical Archives)



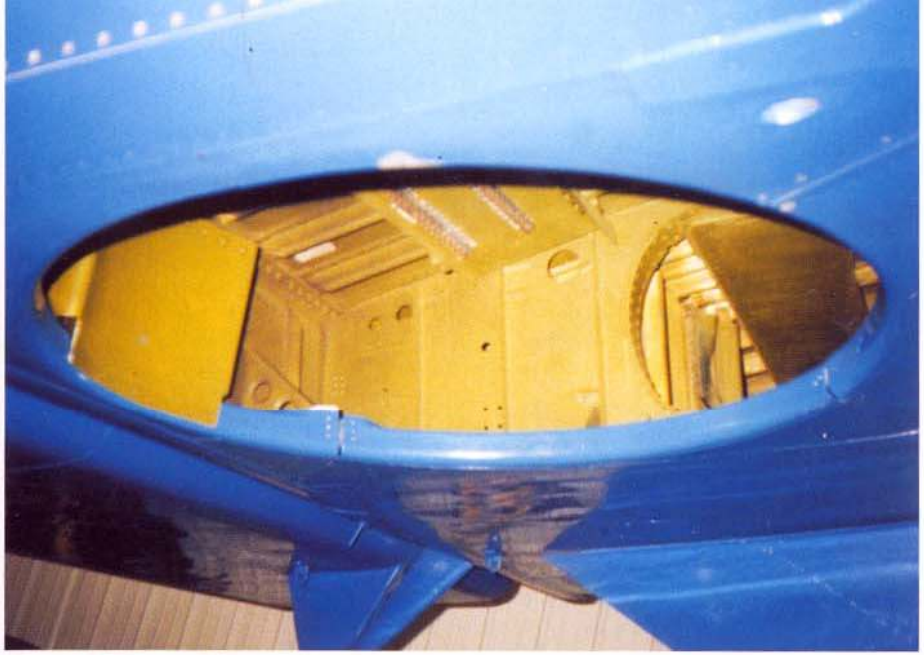




A-1Es employed the same basic main landing gear design used on single-seat Skyraider variants. This gear retracted 95° aft and turned 96° inboard, which allowed the main gear wheel to lie flat against the wing undersurface. The flexible hose on the lower strut's aft face carried hydraulic fluid to the single disc brake fitted to each wheel. The Air Force painted the landing gear assembly Gloss Insignia White (FS17875), while the wheel was COIN Gray (FS36473) to match this aircraft's undersurface color.

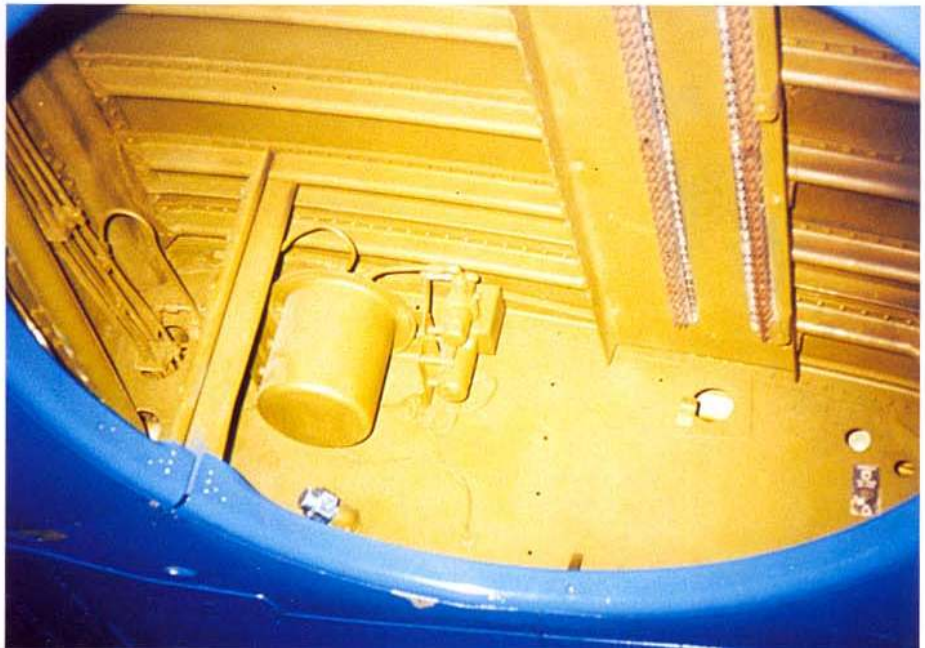


All Skyraider variants were equipped with single disc brakes, which had three spot pad hydraulic calipers. A tow ring was attached to the front of each landing gear strut at the base of the anti-sway brace connection. The dark gray landing gear data plate was attached to the main strut's front face. A catapult hook was mounted on the strut of AD-3W/-4W/-5 aircraft, under a notch in the upper strut door. The door covered this portion of the main landing gear when it was retracted. (Barthelmes)



The AD-5 (A-1E) reverted to the semi-recessed main landing gear employed on the earlier XBT2D-1 and AD-1 variants. A wheel stabilization pad was located on the well's aft area to prevent the wheel from moving laterally inside the well when it was retracted. The circular opening inside the well's inboard surface provided access to the wing's hydraulic pipes and electrical wiring. (Dann)

The windshield degreaser liquid reservoir, pump, and filter were located in the port landing gear wheel well. Two wing nuts held the two quart (1.9 L) capacity reservoir in position using a bracket mounted at wing station 55.50. Electrical terminal blocks for the landing gear and flap position indicators were fitted inside the A-1E's upper wheel well surface. (Dann)



The US Air Force retrofitted a taxi light to the port cover of most A-1E aircraft. This light illuminated the area in front of the Skyraider for landing and taxiing. Some South Vietnamese Air Force (VNAF) aircraft were known to have a taxi light on each wheel cover. Many late model A-1s were retrofitted with stamped steel wheels, which replaced the earlier spoked cast aluminum wheels. This change was made after fatigue failure of the cast wheels became a continuous maintenance problem. (Barthelmes)

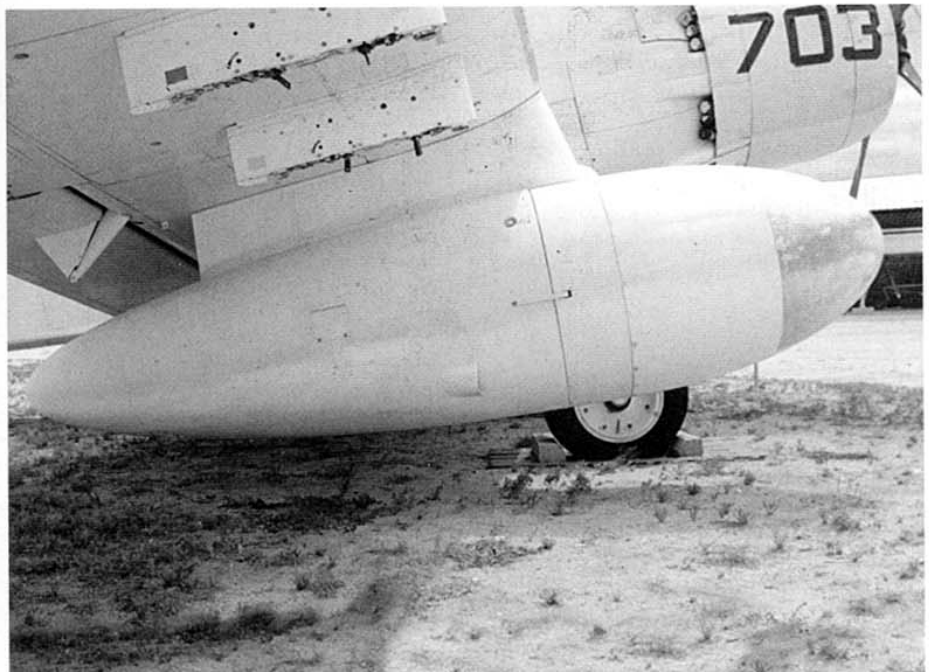
This AD-5 (L-180, BuNo 133872) was assigned to the Naval Air Reserve Training Unit (NARTU) at Naval Air Station (NAS) Los Alamitos, California. The Skyraider was finished in overall Glossy Sea Blue (FS15042) with Insignia White (FS17875) lettering and service stenciling. An anti-glare panel – believed to be either Flat Sea Blue (FS35042) or Flat Black (FS37038) – was painted on the upper fuselage and engine cowling ahead of the windshield. The International Orange (FS12197) aft fuselage band identified Naval Air Reserve aircraft. A 300 gallon (1135.6 L) fuel tank was mounted on the Skyraider's centerline pylon, while a personal gear stowage pod was mounted on the inboard wing pylon. (Barthelmes collection)

An A-1E (NJ-599, BuNo 132466) was parked with its wings folded. All outer wing weapons stations were removed and their interfaces were taped over. This Skyraider was assigned to Attack Squadron 125 (VA-125), a Pacific Fleet Readiness Squadron (FRS) based at NAS Lemoore, California. An unusual backwards numeral 2 was painted on the 300 gallon external fuel tank. The propeller blades were black with white and red tips.

This EA-1E (VR-780, BuNo 133770) was assigned to VAW-13, an all-weather attack squadron based at NAS Alameda, California. An AN/ALT-2 jamming pod was installed on the folded port wing, while an AN/ALQ-2 ESM (Electronic Support Measures) antenna was fitted to the tail immediately under the rudder. (Tailhook Assn.)

This overall Glossy Sea Blue AD-5N (SS-6, BuNo 132553) night attack aircraft was assigned to VC-33, which was based at NAS Quonset Point, Rhode Island. Lettering and markings were Insignia White, including the legend *Night Hawks* painted on the engine cowling. An APS-31B radar pod was mounted on the inner starboard wing pylon. A blister-shaped AN/ARA-25 UHF direction finding antenna was placed under the starboard wing. An AN/APQ-2 searchlight was fitted to the port inboard wing pylon. AD-5Ns normally carried the AN/APA-69 ECM antenna aft of the lower speed brake; however, this antenna was absent from the aircraft. A small blade antenna for the AN/APX-6 IFF system was mounted in front of the tail wheel. (Barthelmes collection)

The APS-31 search radar was fitted into a pod mounted under the starboard wing of AD-3N, -4N, -5N, and -5Q (EA-1F) Skyraiders. This radar had a range up to 200 miles (321.9 KM) and displayed the returns on radar scopes in the cockpit. The pod was mounted onto an extended width pylon for attachment to the Skyraider's wing. (Barthelmes)



This AD-5 (M-500, BuNo 132646) carried the CAG (Commander Air Group) markings of VA-65, which was based at NAS Oceana, Virginia. The Skyraider was fitted with an APS-19C radar pod on the outer port wing panel. Aero 14 outer wing pylons were removed from this AD-5, while 300 gallon fuel tanks were fitted to the inboard wing pylons. The 14 inch (35.6 CM) centerline pylon was installed. The Skyraider's engine cowling and nose flaps were closed. (R. Besecker)

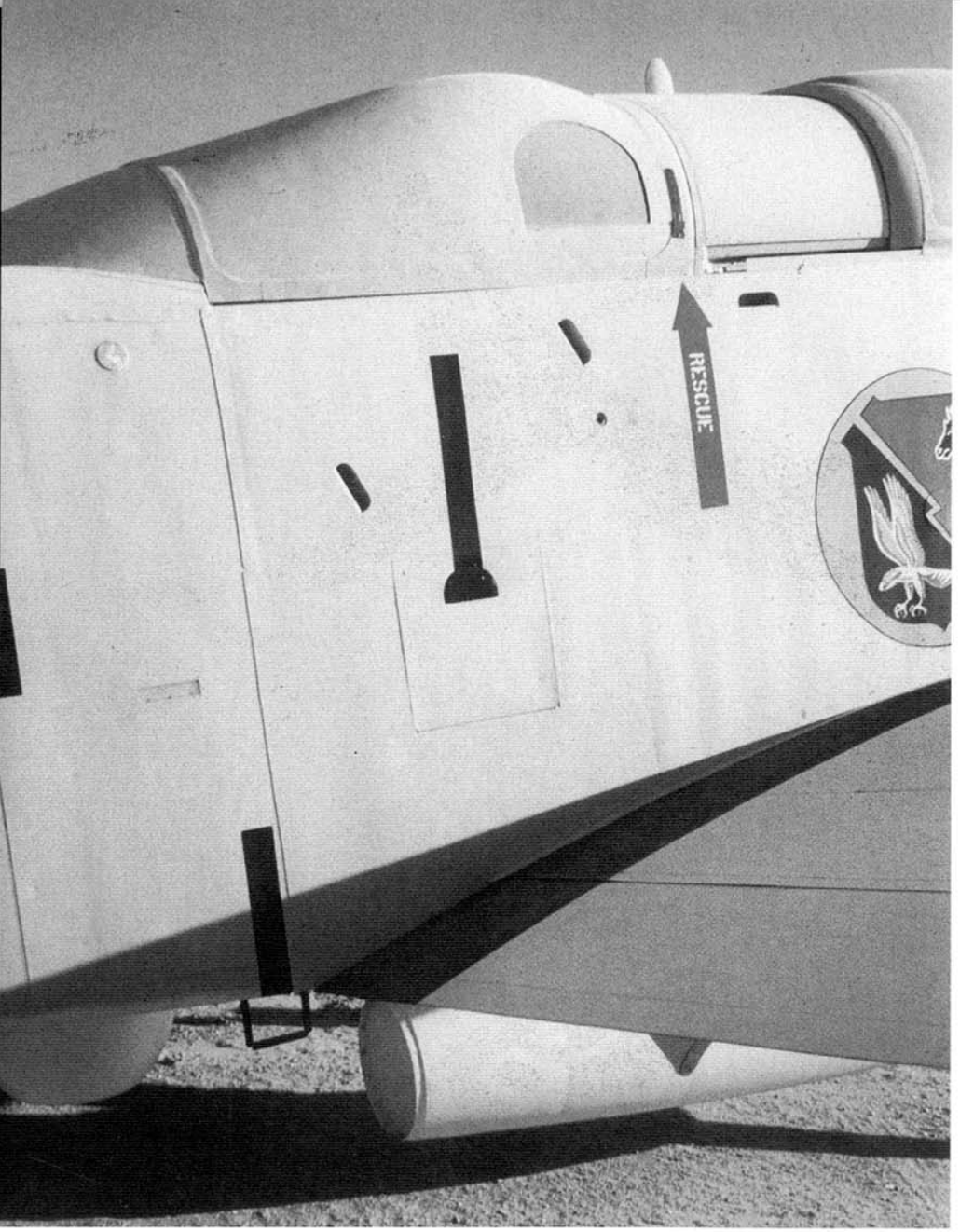
An A-1E (52-132686) taxis at Bergstrom Air Force Base (AFB), Texas. This aircraft was assigned to the 4407th Combat Crew Training Squadron (CCTS), 1st Special Operations Wing (SOW) at Hurlburt Field, Florida. The Skyraider was equipped with the late-style stamped steel wheels, a landing light on the port main landing gear door, and only one 20MM M3 cannon in each wing. A 150 gallon (567.8 L) fuel tank was mounted on the centerline pylon.

Mechanics service an A-1E (52-132649) assigned to the 1st Air Commando Squadron (ACS; later Special Operations Squadron) at Pleiku, South Vietnam. A 500 lb (226.8 KG) bomb was loaded onto the port inboard wing pylon. Maj Bernard Fisher flew this aircraft when he rescued Maj D. Wayne Myers from the A Shau Valley on 10 March 1966. Fisher was awarded the Medal of Honor for this mission. This Skyraider is now displayed at the US Air Force Museum at Wright-Patterson AFB, Ohio. The lower main landing gear door was painted red.

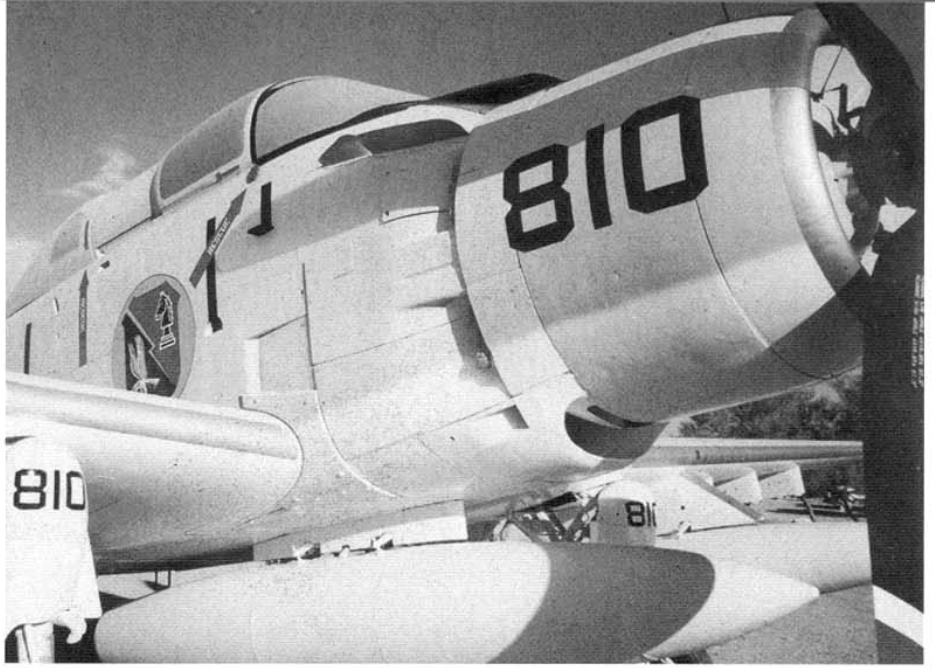
This VNAF A-1E (KWD, 32559) was assigned to the 23rd Tactical Wing and parked at Bien Hoa Air Base, Republic of (South) Vietnam on 15 April 1970. Three 500 lb Mk 82 bombs were mounted under the port wing. The upper and lower camouflage colors were separated by scalloped demarcation lines. These colors were separated with straight lines on other Skyraiders. The COIN Gray (FS36473) rudder is believed to have been cannibalized from an unserviceable Skyraider. The VNAF operated Skyraiders from 1960 up until the fall of Saigon in 1975. (US Air Force)

The A-1E's hinged aft compartment enclosure doors were located between fuselage stations 167 and 220. Each door was attached to the fixed enclosure structure by hinges on the top of the fixed structure's center beam. The aft compartment windows were tinted blue to shield electronic equipment inside this compartment from solar rays. The forward end of the AN/ARN-6 radio compass antenna was attached to the mid-fuselage. This wire antenna ran to the upper forward section of the vertical stabilizer. (Barthelmes)

The aft end of the AN/ARN-6 antenna was fastened to the A-1E's vertical stabilizer immediately below the static boom base. This boom collected static pressure for the Skyraider's altimeter, rate of climb indicator, airspeed indicator, and bomb director altimeter. Another wire antenna led from the vertical stabilizer to the forward portion of the port horizontal stabilizer. This A-1E was the aircraft Maj Bernard Fisher flew on his Medal of Honor mission on 10 March 1966. The markings on this overall COIN Gray Skyraider were Insignia Blue (FS35044). (Barthelmes)



This EA-1F's mid-fuselage section was common to all multi-place Skyraiders. The square hatch on the starboard side was the battery access hatch, with a black semi-circular kick step near the door's hinge. Black vertical lines assisted crewmen in climbing out of the aircraft. A light yellow rectangular formation light was placed on the lower fuselage side. The RESCUE arrow points at the external aft enclosure latch was red with white lettering. (Lawrence)

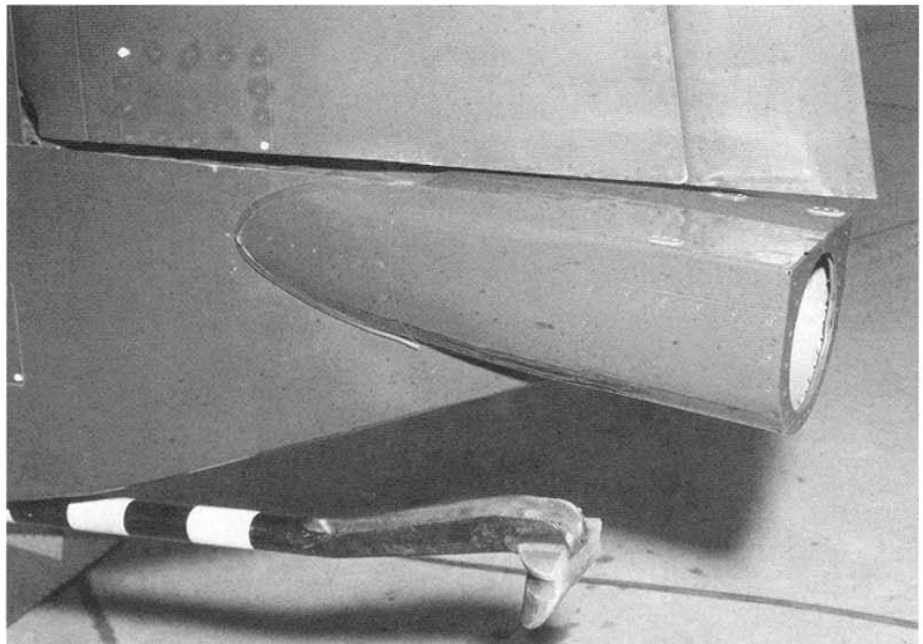


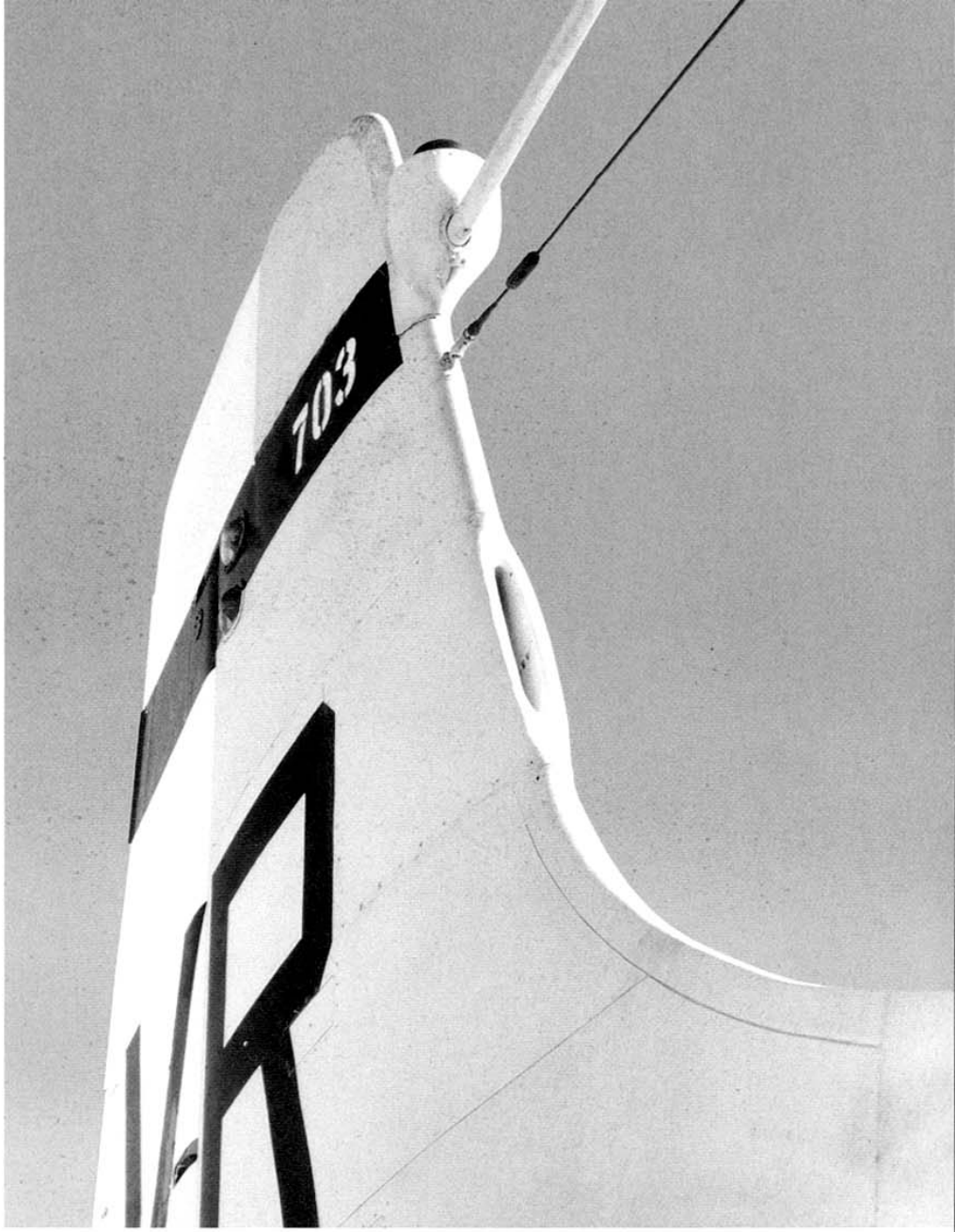
The EA-1F's oil cooler outlets were located just above the wing's leading edge on the fuselage side. These outlets allowed heated air from the oil cooler to escape from the aircraft. A boundary layer bypass inlet was placed immediately forward of the oil cooler intake, which was located under the engine cowling. This location remained the same for all Skyraider variants. (Lawrence)

The AN/ARL-3 antenna array was located in the lower mid-fuselage area on EA-1F (AD-5Q) Electronic Countermeasures (ECM) aircraft. The ARL-3 was used to categorize incoming radar emissions. This Skyraider was also equipped with an AN/APQ-33 radar countermeasure dome antenna (fore) and the AN/APA-69 ECM direction finder dome antenna (aft) under the fuselage. (Lawrence)

A red rotating beacon was mounted on the forward edge of the EA-1F's vertical stabilizer. The static tube was mounted at the beacon's base and the AN/ARN-6 wire antenna from the aft fuselage was attached to the fin below the beacon. Two position lights – clear (upper) and orange (lower) – were fitted immediately ahead of the rudder's leading edge. A static discharge wick was attached to the rudder's trailing edge. (Lawrence)

This AD-5Q was fitted with an AN/ALQ-2 tail warning ESM (Electronic Support Measures) antenna. This device detected electromagnetic emissions within a range that corresponded to fire control radars. The AN/ALQ-2 was designed to give the Skyraider's crew warning of impending danger from opposing aircraft, surface ships, or ground-based radars. The tailhook was fitted under the tail assembly. (Boeing Historical Archives)





All AD-5 variants had a large oval shaped inlet on the vertical stabilizer's leading edge. This opening was the inlet for the aft compartment environmental control system – necessary due to the heat generated by the large Plexiglas enclosure and electronic equipment inside the AD-5's aft compartment. The primary static tube extended through the rotating beacon support housing. This Skyraider's VR tail code was used by VAW-13 at NAS Alameda from 1963 through 1968. (Barthelmes)

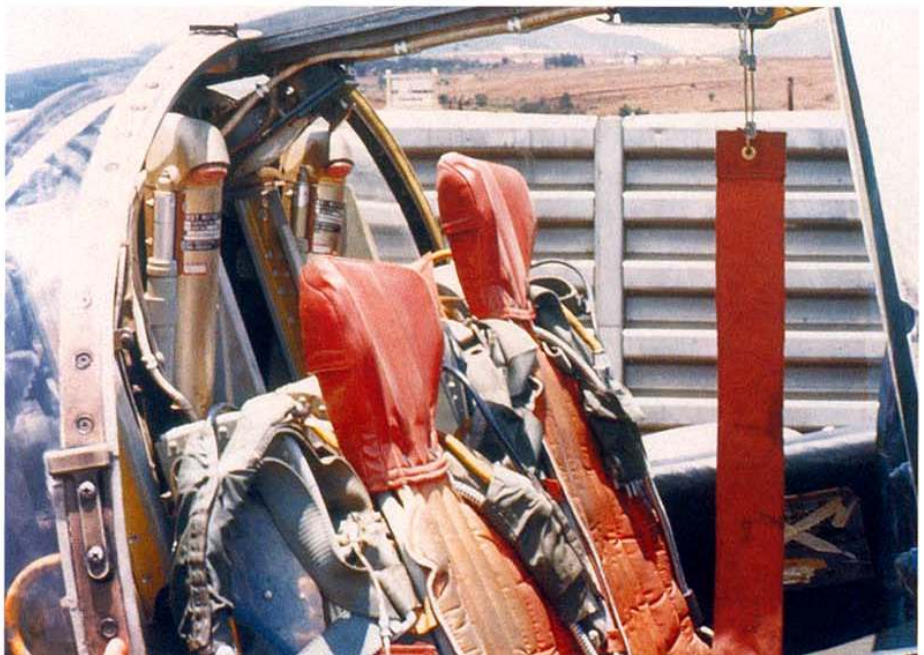
The aft compartment enclosures on EA-1E (AD-5W) and EA-1F (AD-5Q) aircraft were equipped with a small Plexiglas window. This window was tinted blue to reduce light reflection on the various instruments. The tinted window was equipped with a canvas curtain that could be zipped shut to eliminate all exterior light. The vertically-opened enclosure hatches were hinged along the center beam. A rod hinged from the enclosure hatch was lowered when this hatch was opened. The rod reduced tension on the enclosure hinge. (Barthelmes)

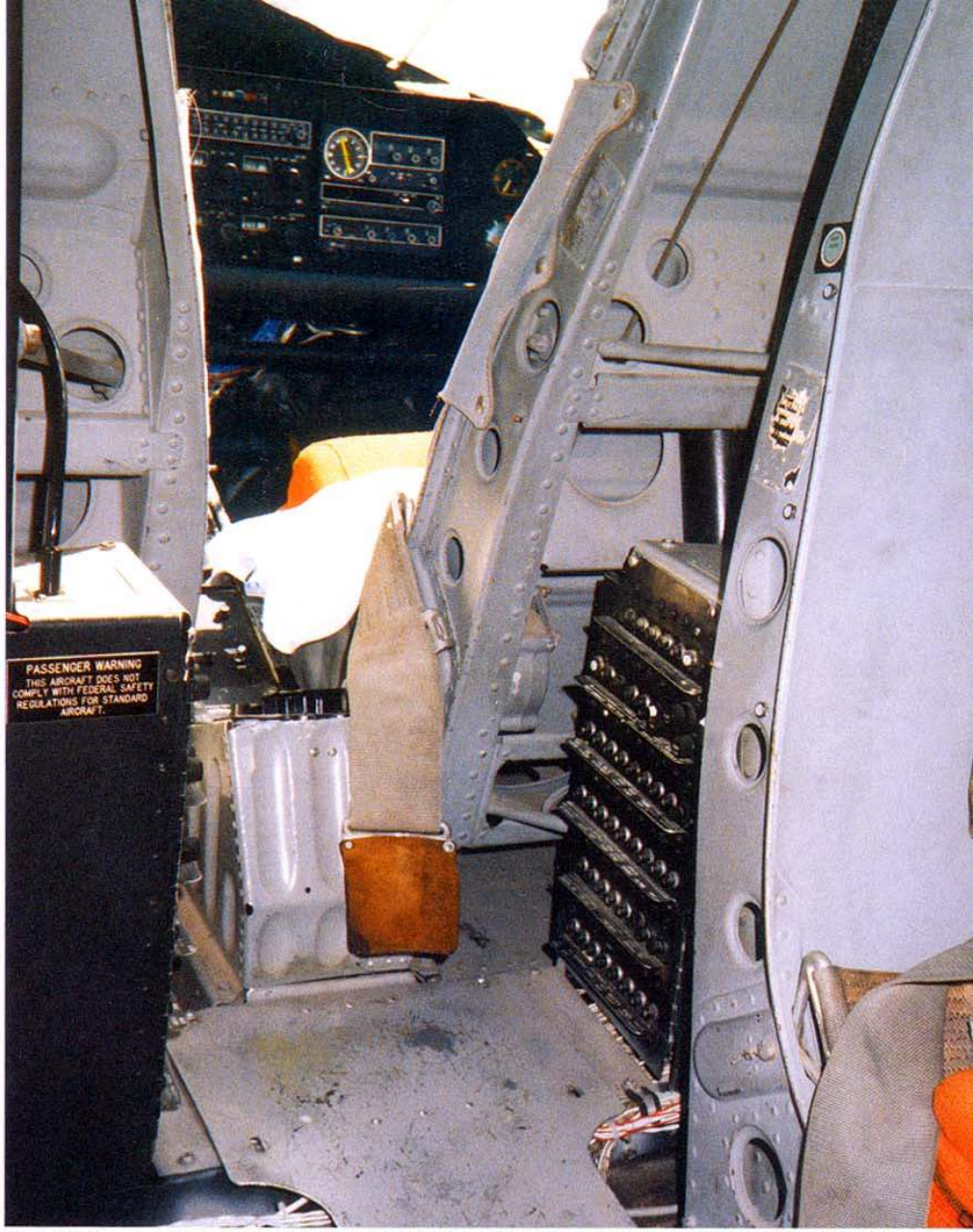
The aft compartment enclosure utilized on EA-1E and -1F aircraft incorporated a small hump in the front. This hump provided additional clearance for the electronics operators inside this compartment. These enclosures were fitted with jettison mechanisms, which allowed rapid opening of these hatches in case of emergencies. (Barthelmes)

The EA-1E and -1F enclosure was hinged at the top to allow access to the rear operator's compartment. The enclosure interiors were painted black to reduce light reflections inside the compartment. The shape of the rear enclosure came from stamped metal inserts that were inserted into the standard enclosure frames. Seven reinforcement ribs were fitted across the interior of each enclosure. (Barthelmes)

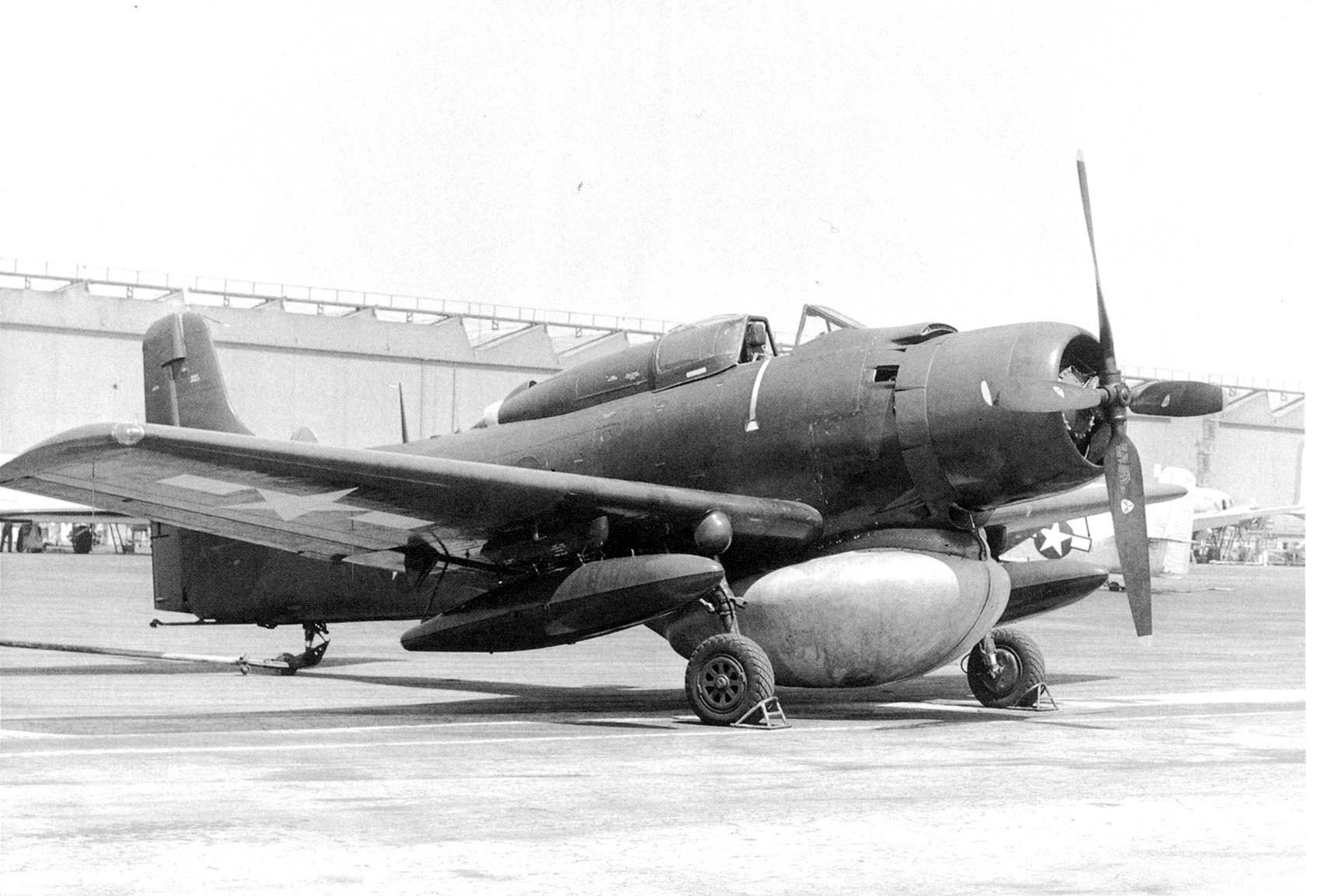
Metal inserts were fitted to the aft compartment enclosures of both the EA-1E (AD-5W) and -1F (-5Q) Skyraiders. These inserts replaced the blue tinted Plexiglas used on the A-1E and -1G variants. The mid-fuselage areas remained the same on all A-1E (AD-5) variants, including the boarding hand grips and foot holds placed along the fuselage sides. (Barthelmes)

The US Air Force installed the Yankee seat extraction system in their A-1E and A-1H aircraft, which aided the crewmen's escape in an in-flight emergency. This A-1E included the typical Yankee extraction system arrangement for both seats. The tractor rocket was mounted in the near vertical position behind each seat. (Barthelmes collection)





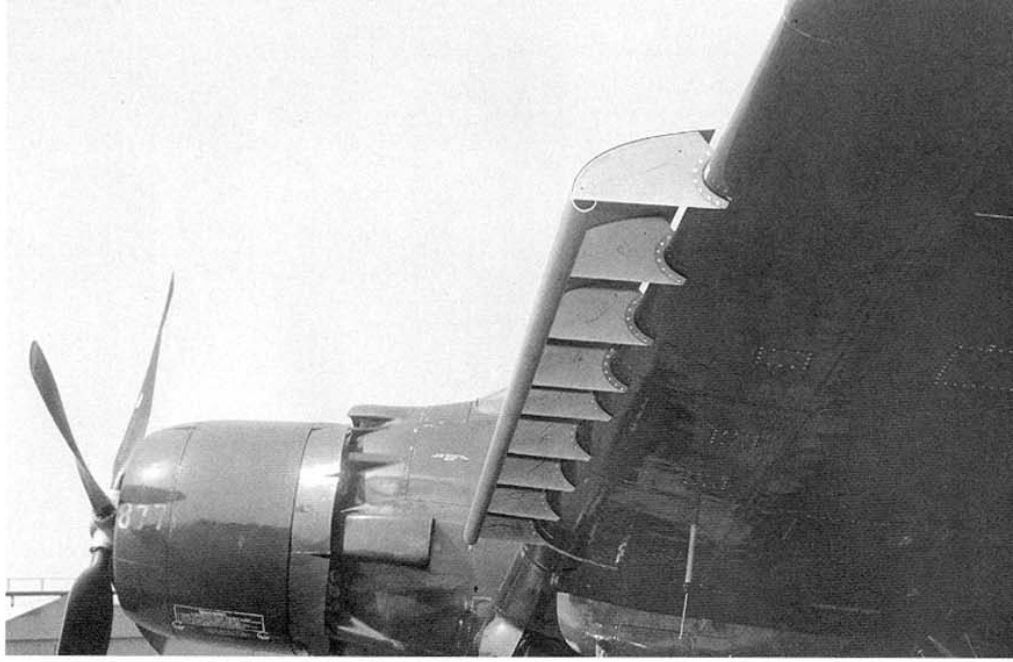
The AD-5's circuit breaker panels were installed immediately aft of the pilots' seats and faced inward. This installation allowed easy access to the circuit breakers during flight and ground maintenance. The seat attachment rod and shoulder harness adjustment cable were fitted to both pilots' seats. The inertial reel connected to the harness cable had locked and unlocked positions. The locked position kept the pilots upright in their seats, while the unlocked setting allowed the pilots to lean forward to reach cockpit switches and controls. (Chuddy)



The XAD-1W (BuNo 09107) – prototype for the Airborne Early Warning (AEW) Skyraiders – was parked outside the Douglas plant in Santa Monica, California on 5 September 1947. Accommodations were made for two radar operators in the fuselage aft of the cockpit. The XAD-1W retained the early style windshield and squared-off canopy used by standard AD-1s. The radar was mounted in a radome under the forward fuselage to give all-around coverage. Two 150 gallon (567.8 L) fuel tanks were mounted on the inboard wing pylons. No AD-1Ws were produced; however, this basic configuration was adopted for the later AD-3W and AD-4W production aircraft. (Douglas)

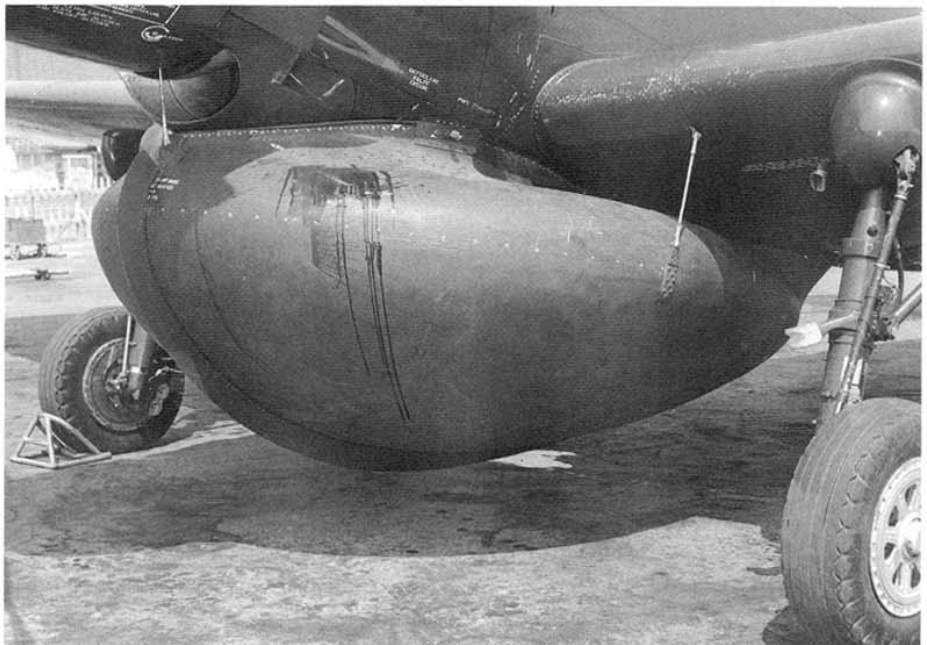
This Skyraider AEW.1 (WU103) was one of 50 AD-4Ws delivered to Great Britain's Royal Navy starting in 1952. The tail code CU indicated this aircraft's assignment to Royal Naval Air Station (RNAS) Culdrose, England. The AN/APS-20 radome's installation required moving the oil cooler outlets from under the fuselage to the fuselage sides. AD-4Ws fitted with radomes were equipped with wing leading edge slats and spoilers. (FAAM)

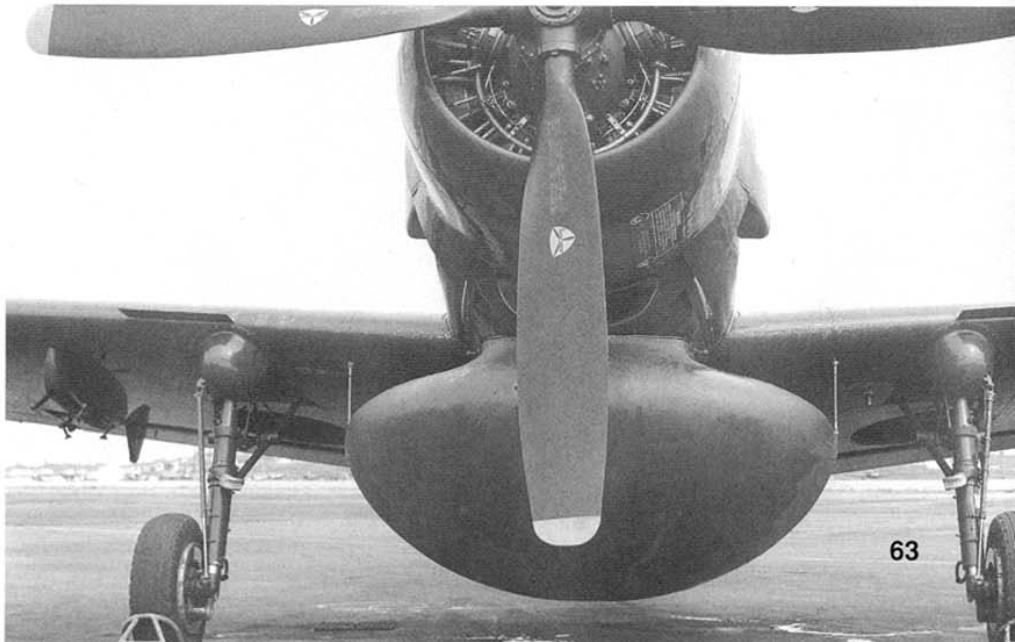
The installation of the AN/APS-20 radome necessitated relocating the catapult bridle hooks from the wings to the main landing gear struts. This particular AEW Skyraider was fitted with a rib down the centerline of the radome. The rib was not adopted for service use. The radome's internal mountings were supplemented by three external braces – one at the front and one on each side. (Douglas)



The AN/APS-20 underfuselage radome caused stability and stall problems on the AD-3W and AD-4W, which led to these aircraft being fitted with fixed leading edge slats. These slats improved the Skyraider's handling at low speeds, including approach and landing. Small stall strips were also installed on the wings' leading edges immediately above each landing gear fairing. (Douglas)

The AN/APS-20 radome mounted underneath this AD-3W (BuNo 122898) flared out from the fuselage mounting before rounding to the radome's bottom. The repositioned catapult bridle hooks were fitted to the main landing gear struts' center section. The AEW Skyraiders did not have main landing gear doors used by most other Skyraiders. (Douglas)





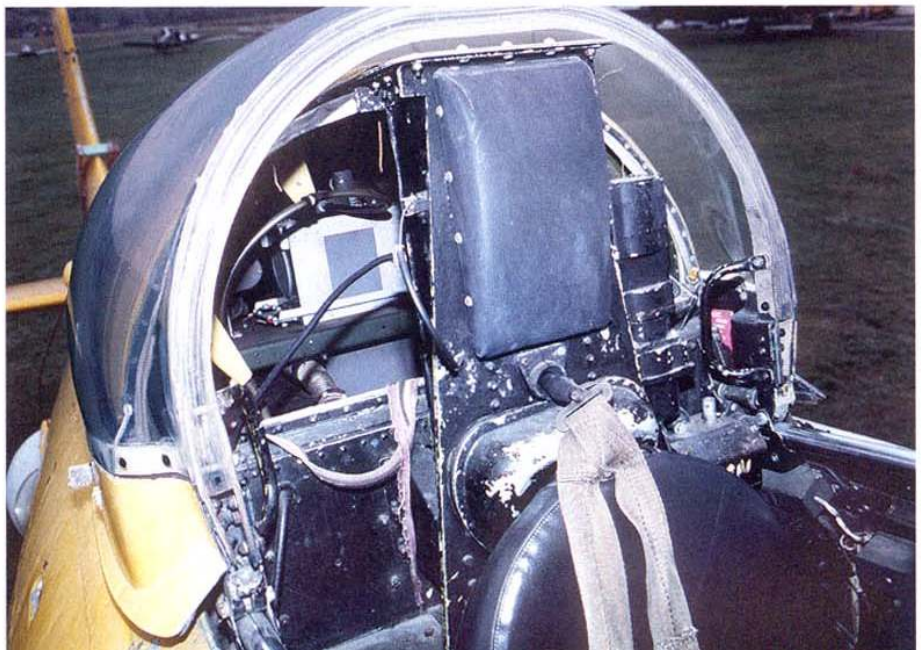
The Skyraider AEW.1 (AD-4W) had the oil cooler outlets positioned in fuselage side fairings between the exhaust pipe groupings. This change was made because the underfuselage installation of the AN/APS-20 radome covered the normal oil cooler outlet position. This AEW.1 was one of 12 ex-Royal Navy Skyraiders delivered to Sweden as target tugs in the early 1960s. The radome was removed prior to delivery; however, the oil cooler outlets remained in this fuselage side position. (Barthelmes)

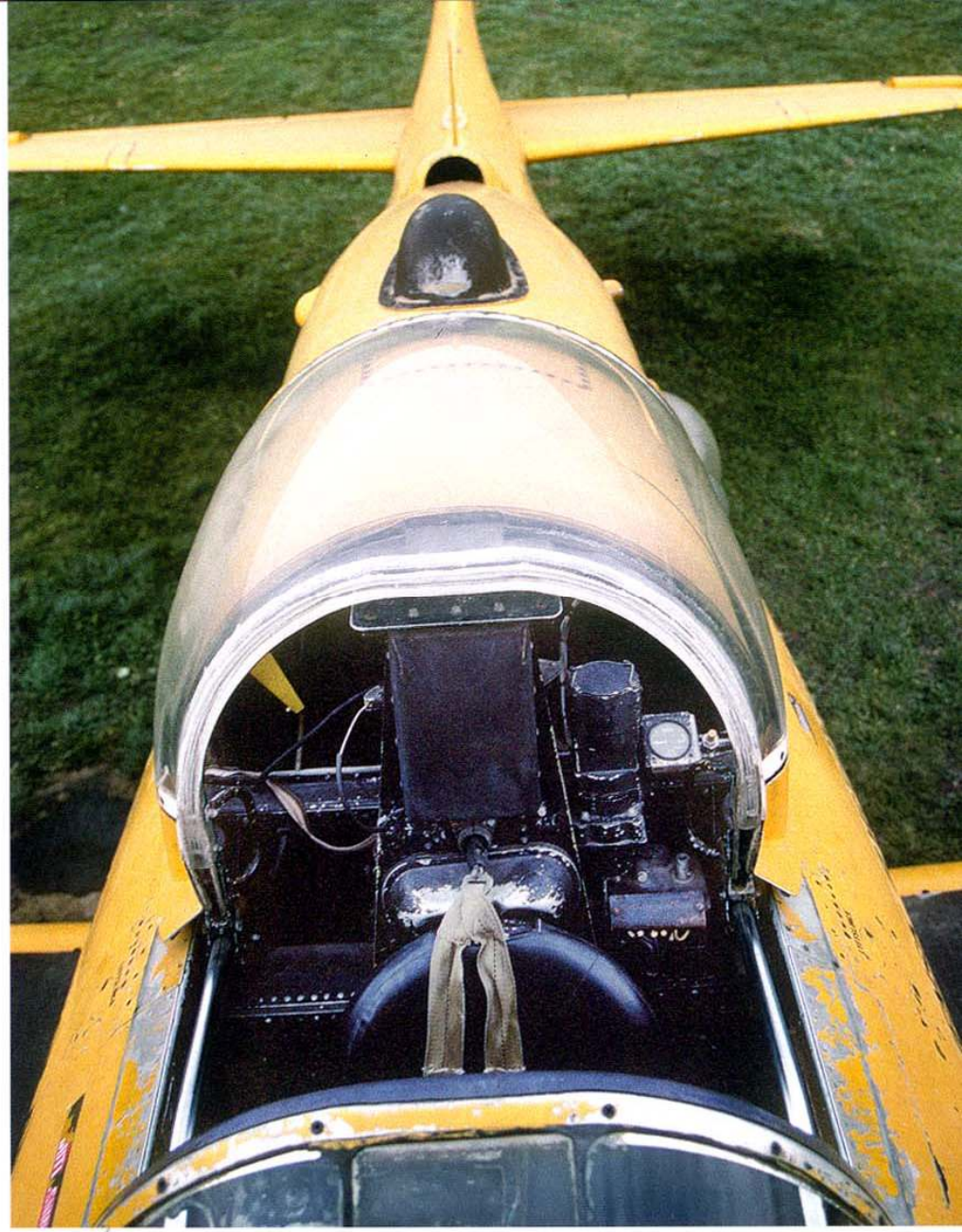
The AD-3W and -4W featured a unique pilot's canopy, which slid back to open. This enclosure included the rectangular emergency release lever on the lower canopy side, which was used on the standard Skyraider canopy. The white trim around the Plexiglas canopy was weather seal, which kept air and moisture out of the cockpit. (Barthelmes)

The AD-3W and -4W AEW canopy was actuated by a chain drive, which opened or closed the canopy. The canopy guide rail exited aft and at the canopy frame's bottom. A hatch with a port side hinge was located immediately aft of the canopy. This hatch allowed access to the radar modulator, which varied the radar waves' frequency. A black fairing was mounted atop the radar modulator access hatch. (Barthelmes)

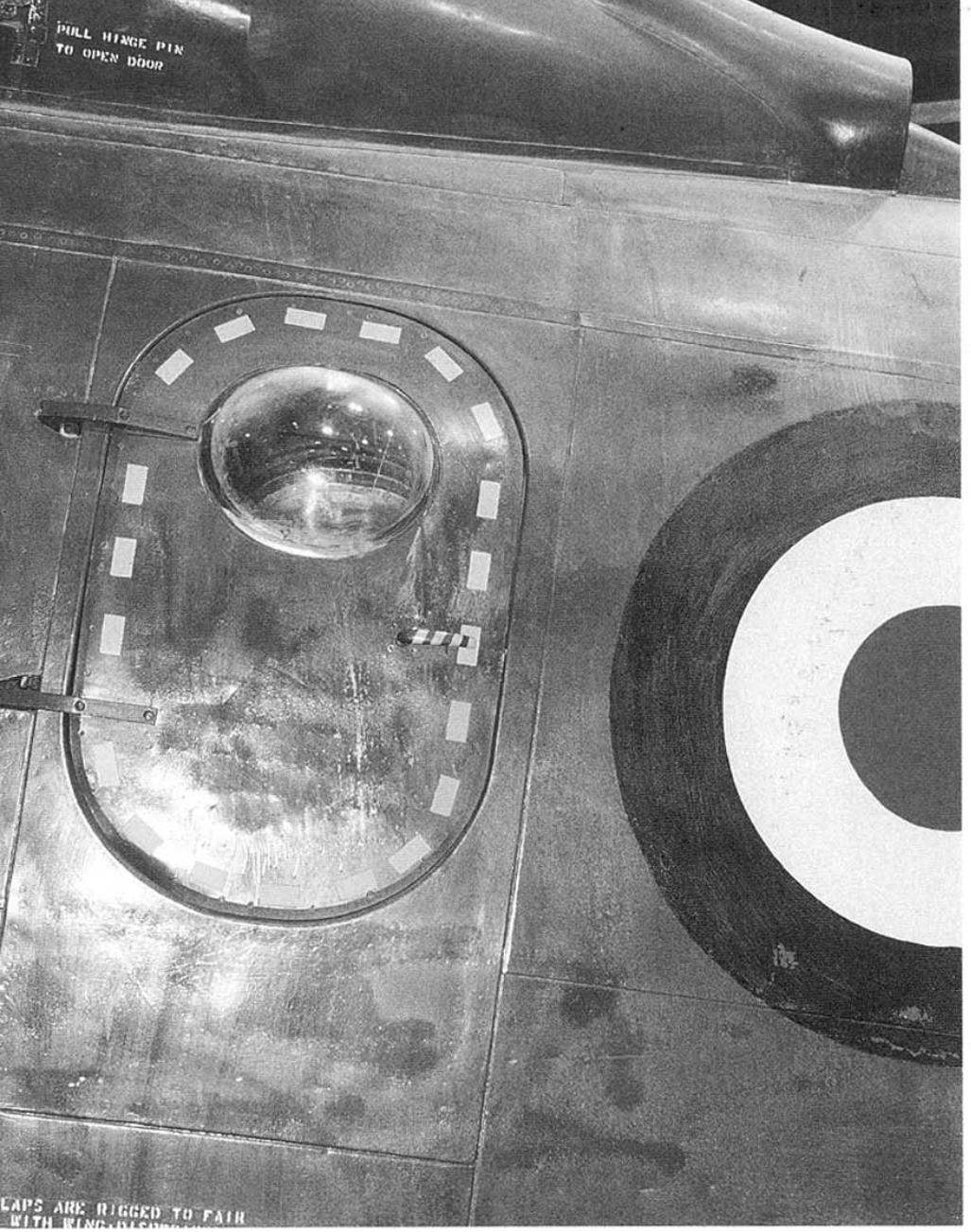
The cockpit of the Swedish Skyraider AEW.1s was little changed from the configuration used by the Royal Navy's Skyraiders. The one major difference on the Swedish aircraft was replacement of the AN/APS-20 radar scope on the panel's far starboard side by engine instruments. The lack of outer wing weapons stations resulted in a revised armament panel on the instrument panel's lower port side. (Barthelmes)

The Skyraider AEW.1 pilot's seat was equipped with a padded leather headrest, which was fitted to the seat back with a rollover bar. This bar improved structural strength in the event of an accident. Various avionics equipment was mounted immediately aft of the headrest. Manual canopy operating handles were located on the port and starboard sides of the canopy's forward edge. (Barthelmes)

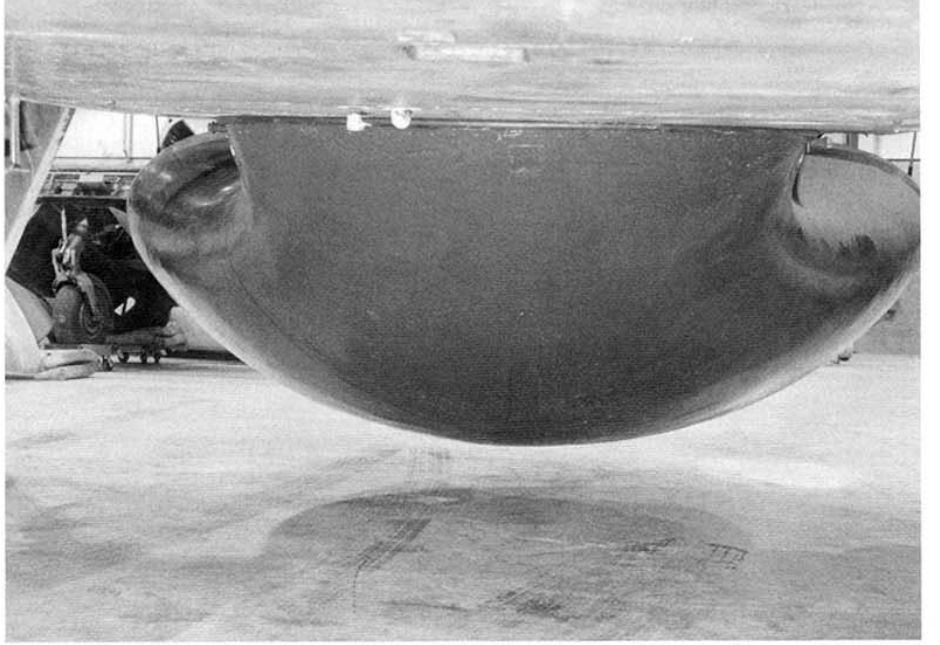




The AD-4W's canopy actuation motor was mounted to port of the pilot's headrest. This motor operated the chain drive mechanism for opening or closing the canopy. The sliding canopy was tapered at the front to interface with the standard width windscreen. The aft portion of the sliding enclosure was widened to provide clearance for the radar modulator fairing immediately aft of the cockpit. The contractor *Svensk Flugjanst AB* (Swedair Limited) operated the 12 Skyraider AEW.1 target tugs until the early 1970s. (Barthelmes)

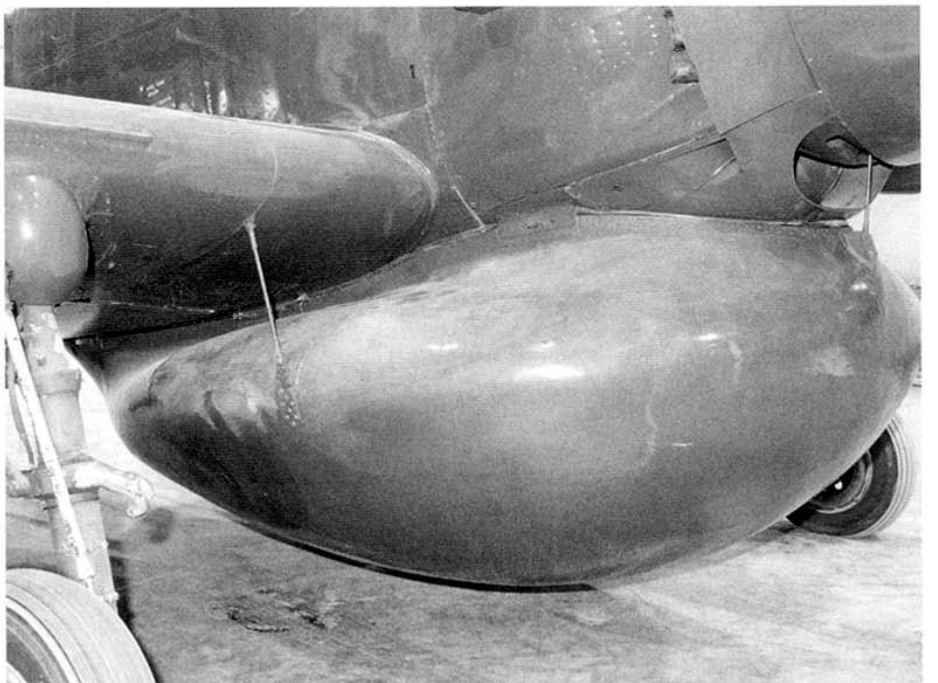


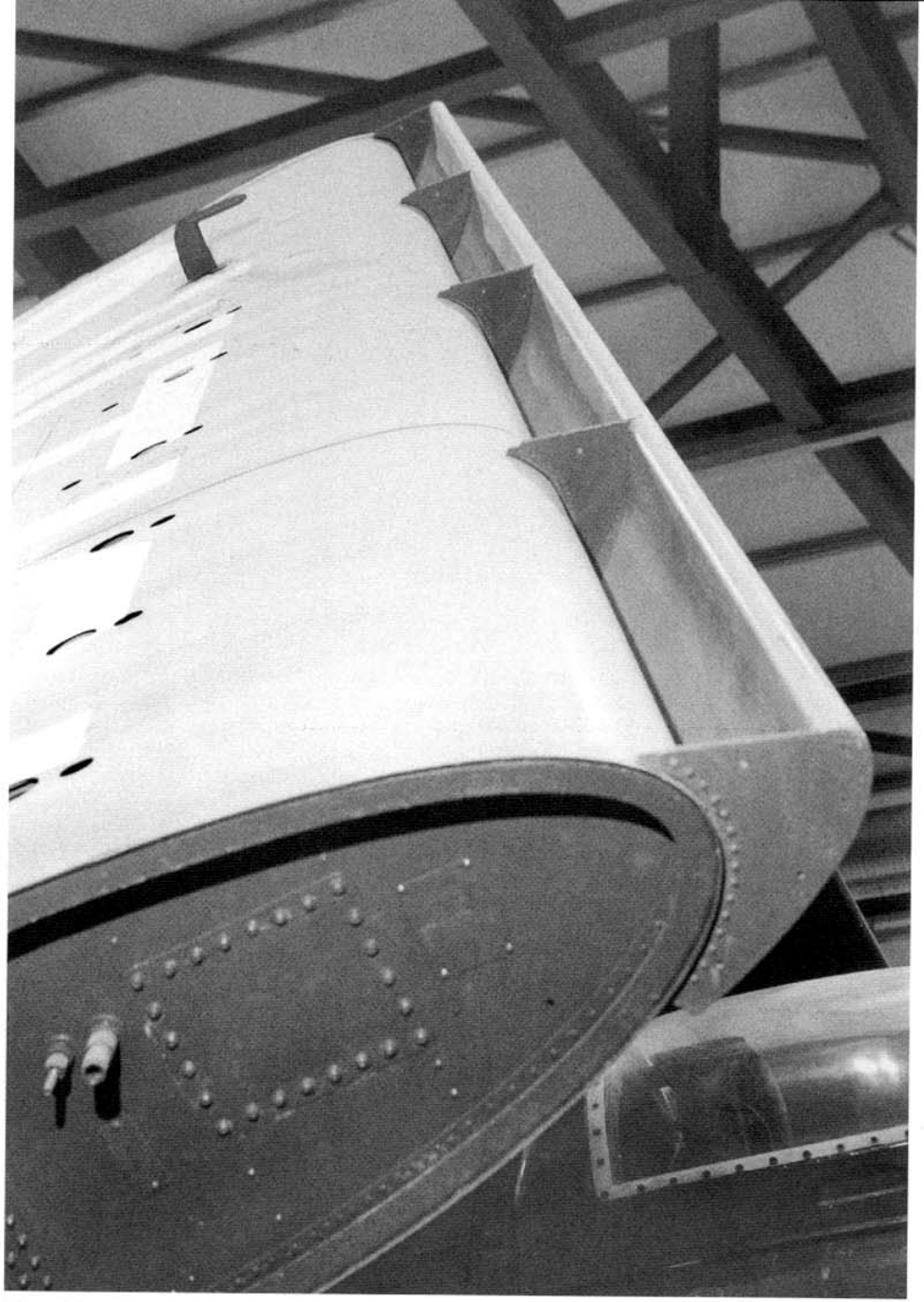
The Skyraider AEW.1 (AD-4W) had crew entrance doors on either side of the fuselage. This door was held in place by two forward-mounted hinges and had an oval bubble-type window in the door's upper section. The British retained the US Navy's overall Glossy Sea Blue (FS15042) on their Skyraiders. A yellow dotted line outlined the door for emergency purposes. This aircraft (WT121) is displayed at the Fleet Air Arm Museum (FAAM) at RNAS Yeovilton, England. (FAAM)



The aft end of the AN/APS-20 search radar's dome was faired into the Skyraider AEW.1's fuselage. A rubber seal along the fuselage/radome interface kept moisture away from the sensitive electronic equipment. The fiberglass radome covered the 1000 pound (453.6 KG) AN/APS-20 radar, which used an eight foot (2.4 M) elliptical dish antenna. (FAAM)

The AN/APS-20 radome was supported by a brace mounted at the front and one brace on both the port and starboard sides. These three braces helped prevent the radome from swaying in flight, which would degrade the radar's performance. (FAAM)





The AD-3Ws, -4Ws, and Skyraider AEW.1s were equipped with fixed leading edge wing slats. These slats helped improve the aircraft's low-speed handing, which was degraded by the AN/APS-20 installation under the fuselage. The slat was mounted to the wing using five plates. The pitot tube mounted on the starboard wing undersurface recorded air pressure for the cockpit's air speed indicator. (FAAM)

Non-moveable finlets were installed on both horizontal stabilizers of the Airborne Early Warning (AEW) Skyraiders. This installation countered the loss of longitudinal stability, which had resulted from the AN/APS-20 radar system installation. The US delivered 50 AD-4Ws to Britain, including 20 new-built aircraft and 30 AD-4Ws from US Navy stocks. The Royal Navy flew the Skyraider AEW.1 from 1952 until 1960. (FAAM)

The AD-4N night attack Skyraider had a crew access door on each mid-fuselage side, aft and below the cockpit. The door's forward-mounted hinges and handle were not flush with the aircraft's skin. A reinforcement strip placed immediately above the door provided additional fuselage skin strengthening. Uncovered hand grips were placed within the fuselage surface to aid pilots in climbing on and off of the Skyraider. This silver-painted AD-4N was operated by the French Air Force in Africa. (Barthelmes)

The fuselage access door was equipped with a large oval window and a rigid pocket below the window. This pocket normally contained a canvas curtain that could be placed over the window opening to eliminate exterior light. A canvas strap fixed to the door's bottom could be hooked to a keyed opening in the fuselage skin to hold the door open. (Barthelmes)

Flight control cables ran along the ceiling of the AD-4N's mid-fuselage cabin. Light green soundproofing covers were placed over a large amount of the cabin interior and easily removed or installed using metal snaps. An amber light in the ceiling was used to illuminate this cabin. The round brass bell mounted immediately forward of the aft bulkhead alerted compartment personnel of emergency conditions. (Jerry Foster)

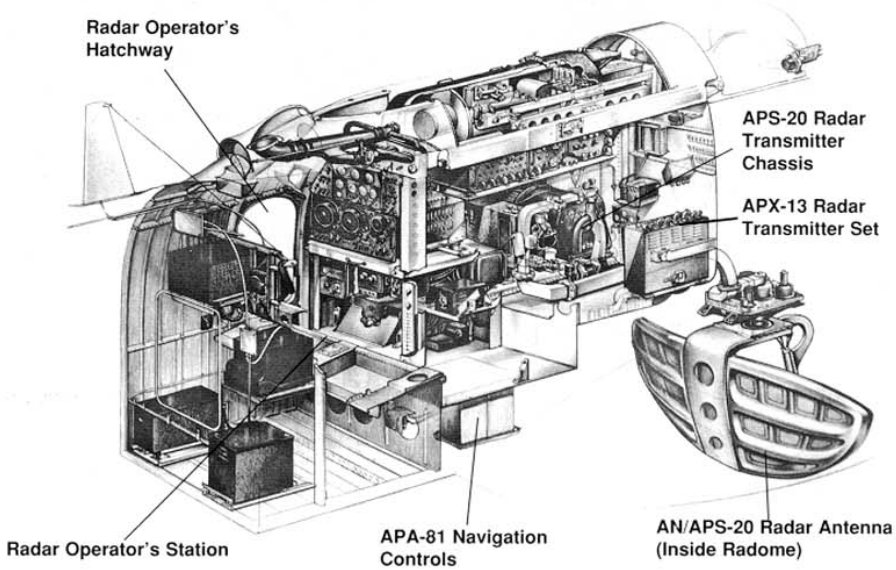
All electronics gear was removed from the interior cabin of this AD-4NA (BuNo 126997), which is owned by the Cinema Air Group of Carlsbad, California. This Skyraider is currently on display at the Grand Canyon Museum in Arizona. The electronic rack mounts and internal structure were painted Zinc Chromate (FS34151) to prevent corrosion. The black cone mounted on the cabin floor was the relief tube used by aft compartment crewmen on long flights. (Jerry Foster)

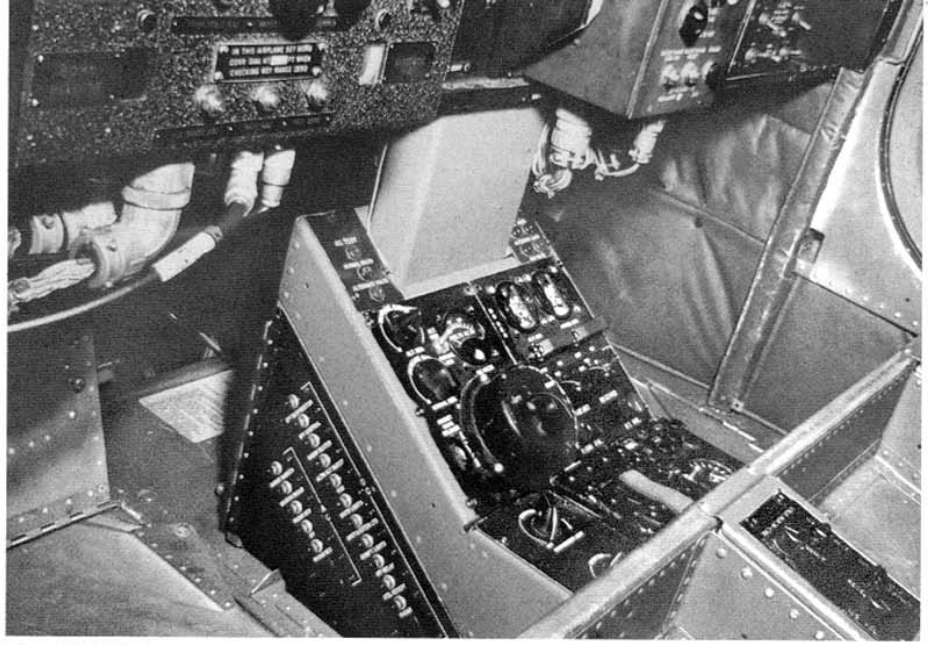
Early AD-3Ws and -4Ws (through BuNo 124127) used these early style radar operators' seats, which featured fixed lower seat pans and headrests with adjustable backs. Aft compartment switches and circuit breakers were contained in a panel mounted above the cabin door. The lever above this panel controlled the port shoulder harness inertia reel; the starboard operator's lever was located on the cabin's opposite side. Snaps placed along the cabin door's window allowed a blackout curtain to be attached. (FAAM)

AD-4W radar operators and mechanics used the corrugated panel to gain access to the radar system instruments and equipment. This panel was mounted above the APA-81 navigation control, approximately 14 inches (35.6 CM) above the cabin floor and forward of the radar operators' stations. An APX-7 radar identification set topped the starboard equipment stack, with the space for a missing APA-57 position indicator amplifier immediately below the APX-7. The APX-13 radar transmitter was placed at the starboard stack's bottom. The cylindrical APS-20 radar transmitter chassis was located in the cabin's center, with its synchronizer mounted above it. (FAAM)

This early AD-5W (NE-38, BuNo 132772) had its aft compartment enclosures covered with a reflective liner. This liner was an early attempt to address the problem of too much ambient light and heat coming into the aft cabin and making it difficult to read the radar scopes and instruments. Douglas abandoned the reflective liner after several tests in favor of solid metal enclosures, which became standard in production AD-5W (EA-1E) and AD-5Q (EA-1F) aircraft. (AAHS)

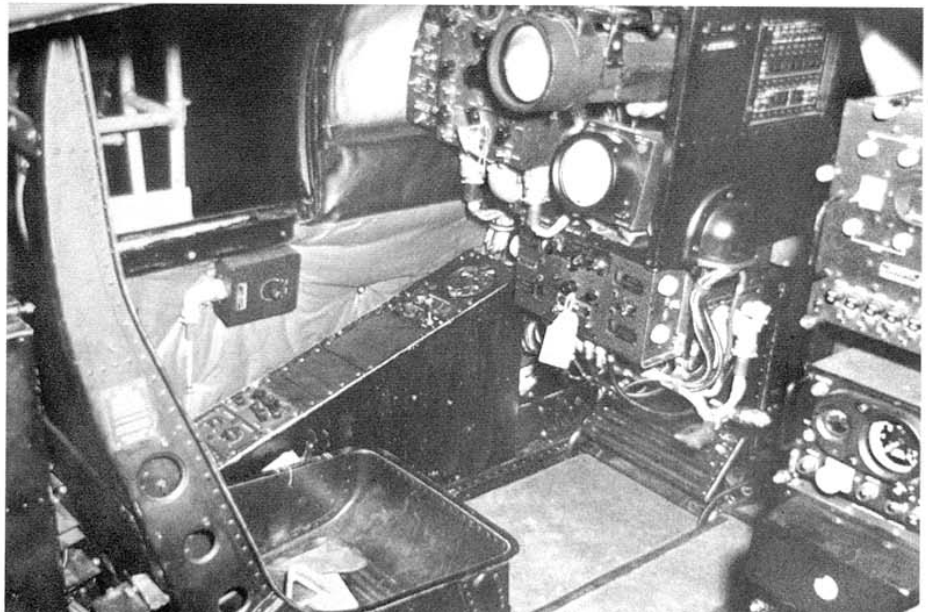
This factory cutaway drawing showed the AN/APS-20 search radar installation in the AD-3W Skyraider, which was repeated in the later AD-4W. The eight foot (2.4 M) wide radar antenna was housed inside a fiberglass radome under the fuselage. Various electronic equipment was carried inside the mid-fuselage, aft of the cockpit. The two radar operators were seated in the aft section of this compartment, facing the radar scopes and instruments. (via Harry Gann)

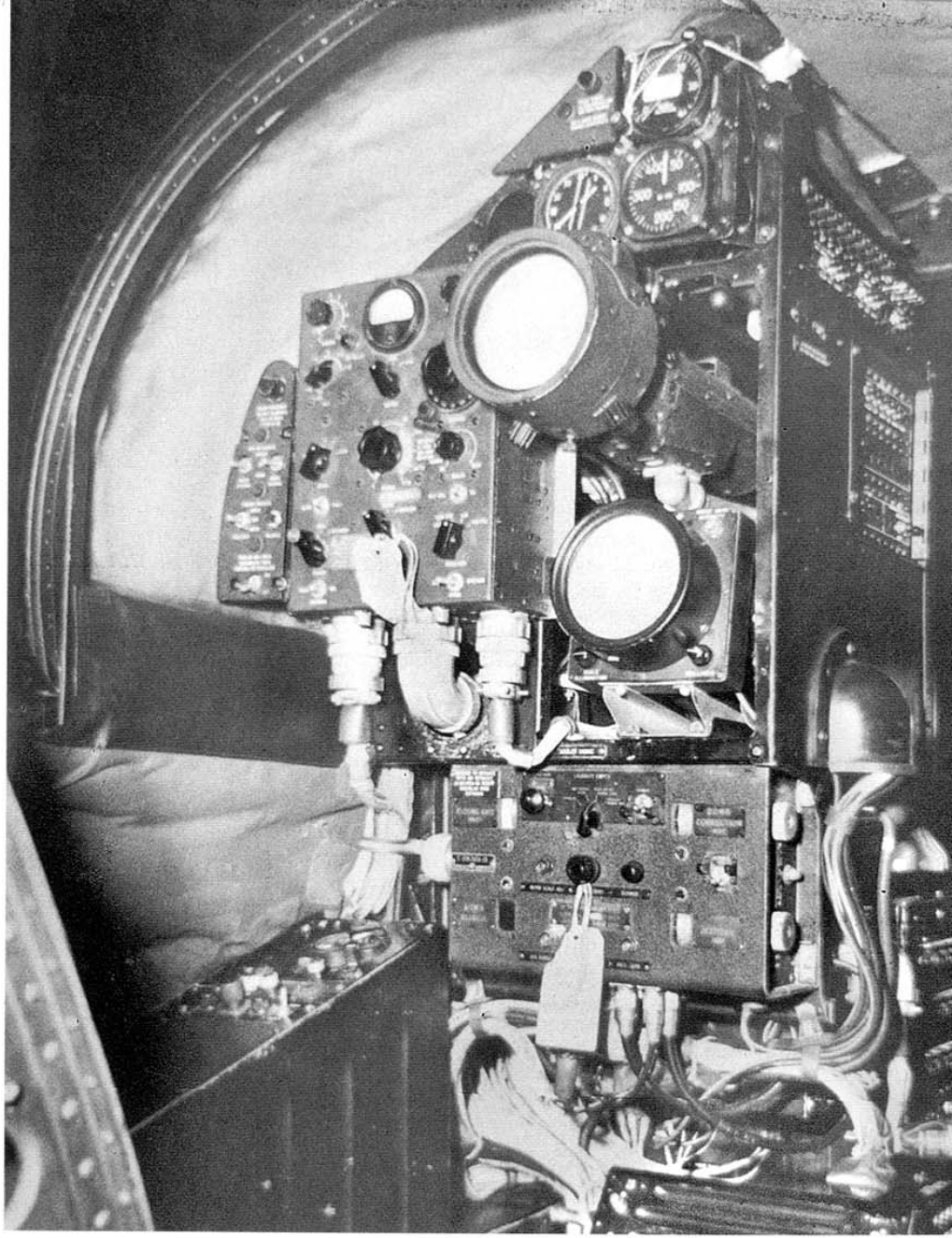




The AD-4N's lower center console contained the aft compartment electrical distribution control panel on the angled starboard quadrant. The console's port quadrant housed the radar autopilot interface, which allowed accurate flying in all weather conditions. The flat section at the panel's bottom was the chaff/sonobouy dispenser control panel. A small panel between the seats housed the AIC-4 interphone controls. Circuit breakers were mounted on the console side panels. (Douglas)

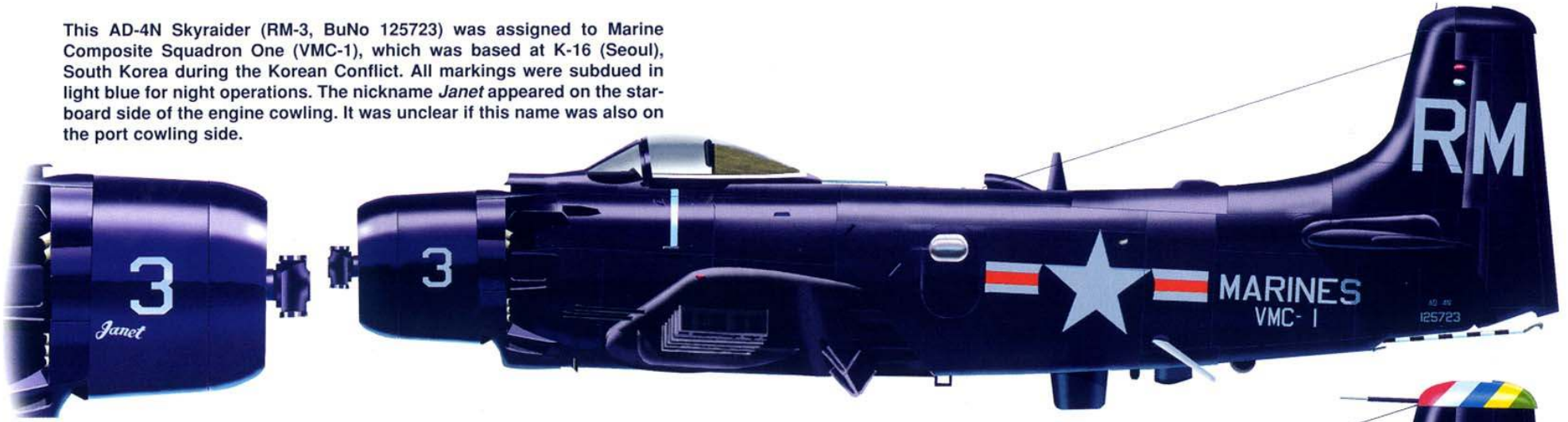
Instruments were mounted on the starboard side of the AD-5N's aft compartment, beside the radar operator's station. The APS-31 radar's synchronizer was placed at the top of these instruments, with the APR-26 receiver and VRW-7 wire recorder below the synchronizer. Immediately aft of the radar operator's seat were the APR-9 power supply, the amplifier, and the tuner. (Douglas)



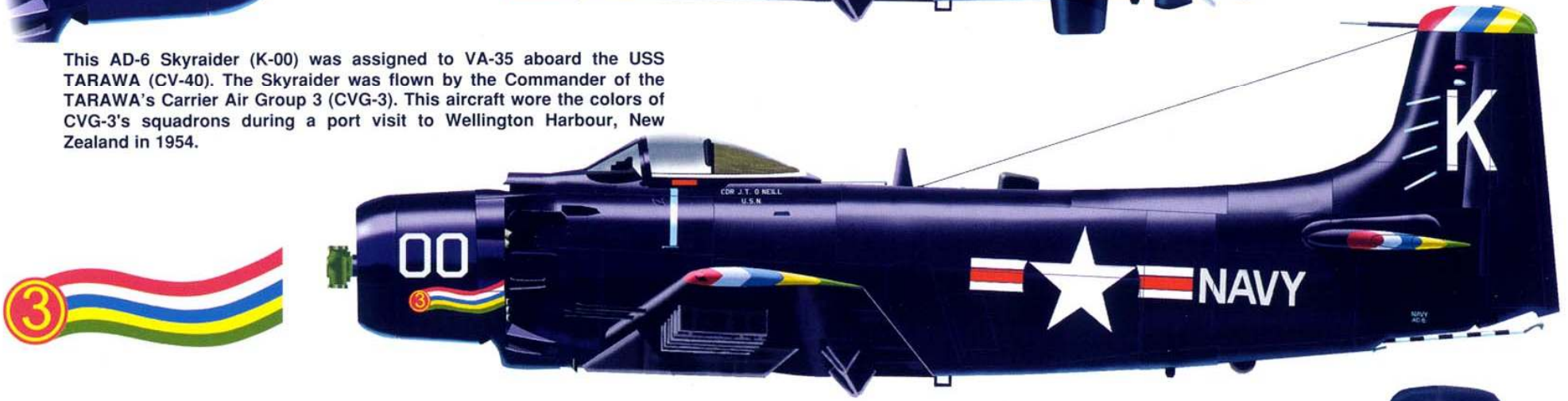


APS-31 radar controls were placed to port of the AD-5N radar operator's display unit. An APA-69 indicator was located below and to starboard of the APS-31 radar scope, while the APA-16 radar bombing control unit was mounted in a large box at the panel's bottom. Circuit breakers for the aft compartment equipment were placed on the starboard side of the radar operator's equipment panel. Instruments were painted Instrument Black (FS27038). (Douglas)

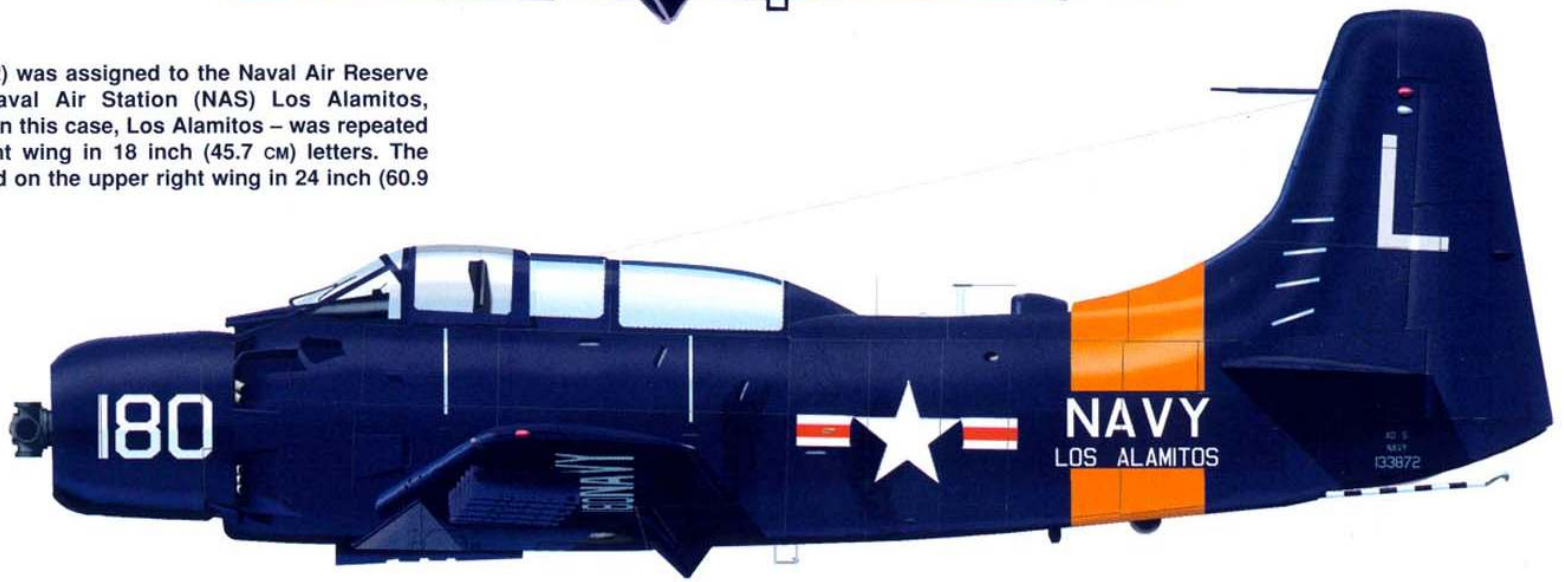
This AD-4N Skyraider (RM-3, BuNo 125723) was assigned to Marine Composite Squadron One (VMC-1), which was based at K-16 (Seoul), South Korea during the Korean Conflict. All markings were subdued in light blue for night operations. The nickname *Janet* appeared on the starboard side of the engine cowling. It was unclear if this name was also on the port cowling side.



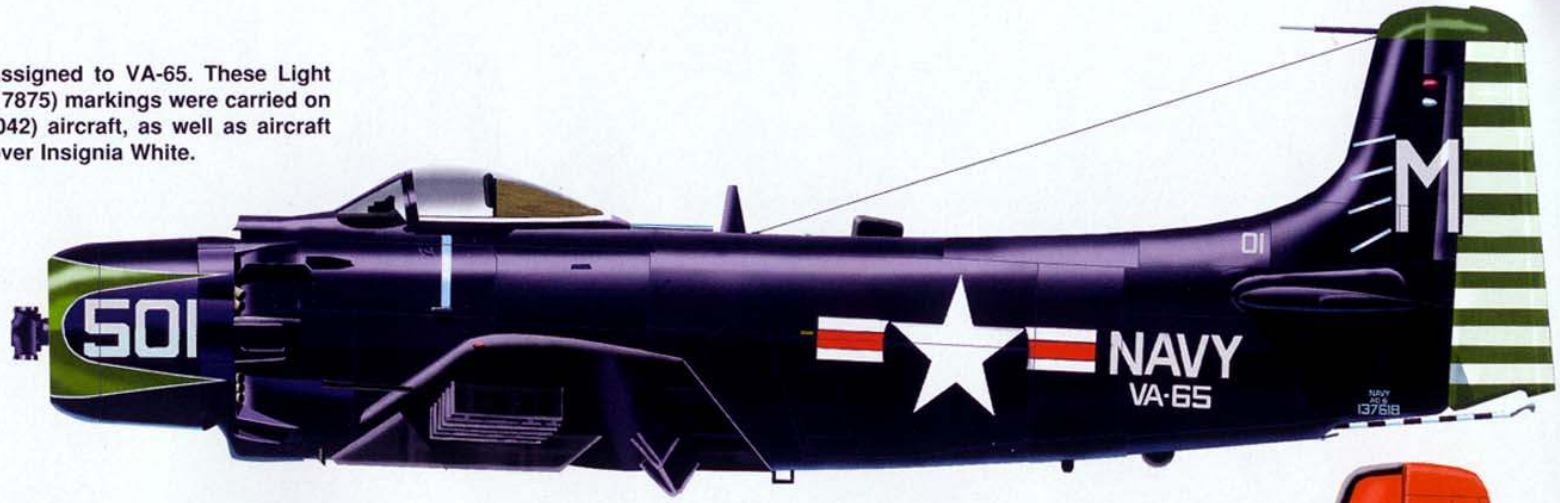
This AD-6 Skyraider (K-00) was assigned to VA-35 aboard the USS TARAWA (CV-40). The Skyraider was flown by the Commander of the TARAWA's Carrier Air Group 3 (CVG-3). This aircraft wore the colors of CVG-3's squadrons during a port visit to Wellington Harbour, New Zealand in 1954.



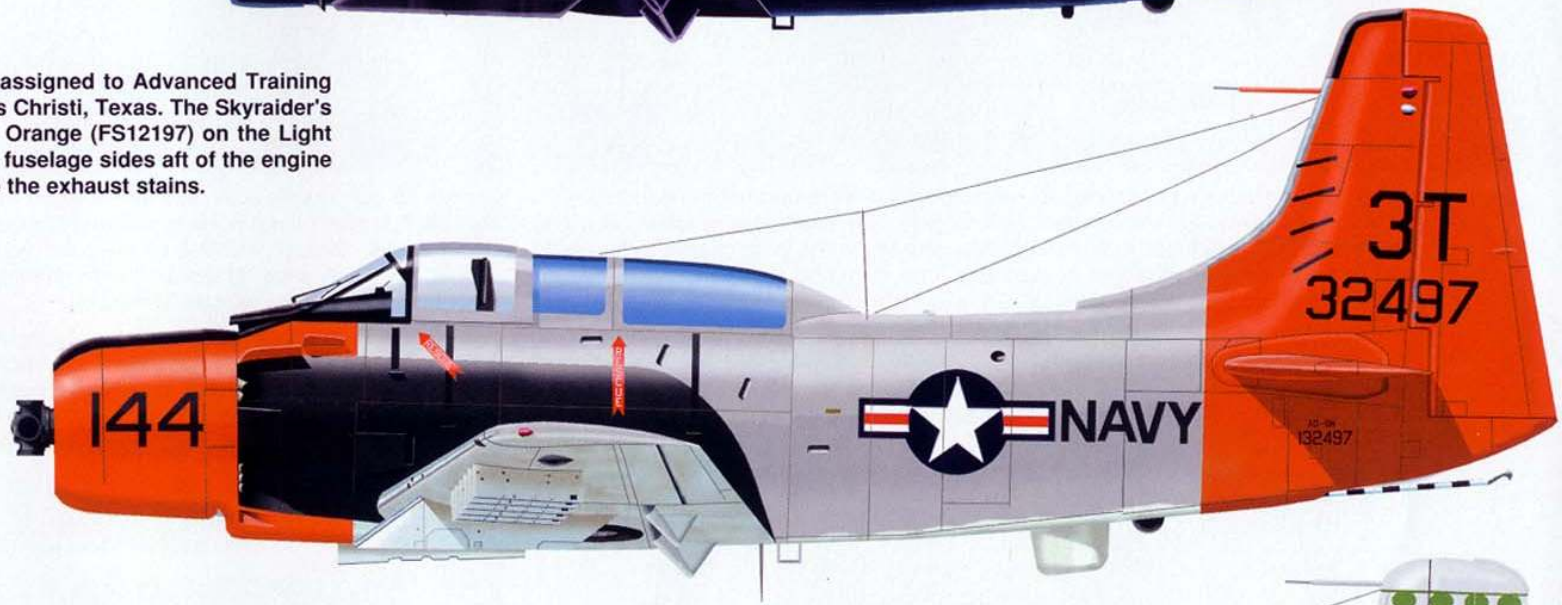
This AD-5 (L-180, BuNo 133872) was assigned to the Naval Air Reserve Training Unit (NARTU) at Naval Air Station (NAS) Los Alamitos, California. The Station name – in this case, Los Alamitos – was repeated in two rows on the upper right wing in 18 inch (45.7 cm) letters. The MODEX (180) was also repeated on the upper right wing in 24 inch (60.9 cm) numbers



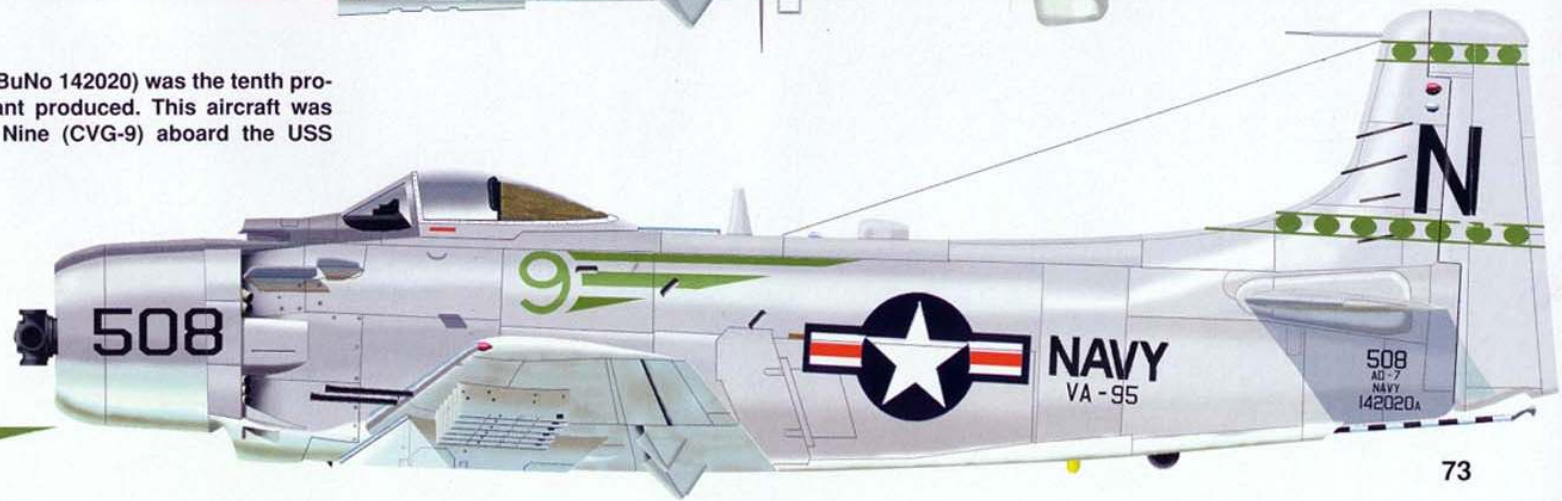
This AD-6 (M-501, BuNo 137618) was assigned to VA-65. These Light Green (FS14187) and Insignia White (FS17875) markings were carried on the Squadron's Glossy Sea Blue (FS15042) aircraft, as well as aircraft later painted Light Gull Gray (FS36440) over Insignia White.

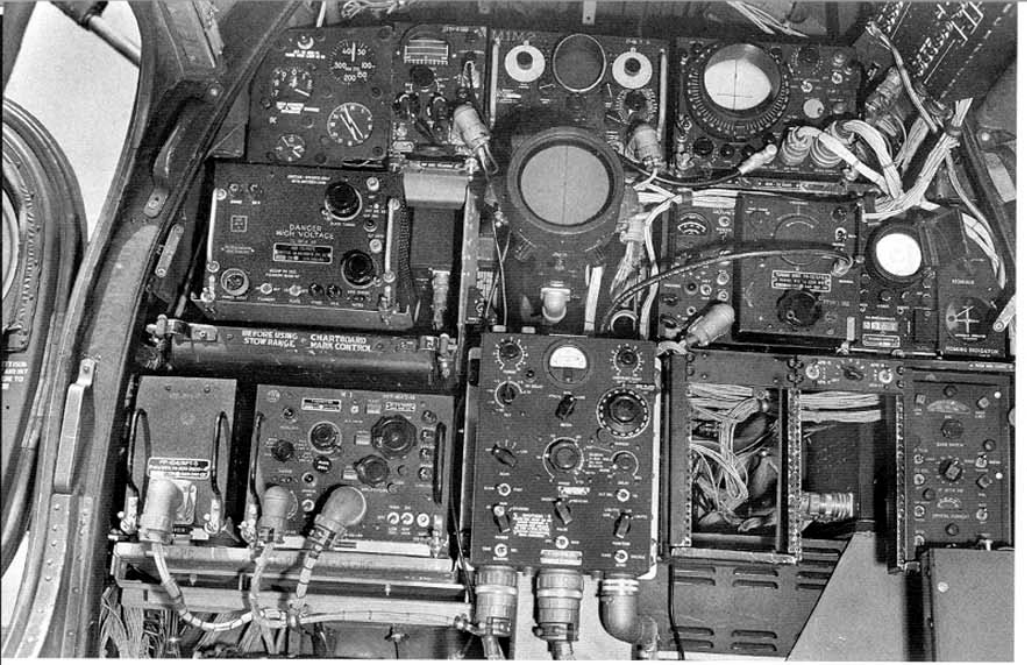


This AD-5N (3T-144, BuNo 132497) was assigned to Advanced Training Unit 301 (ATU-301), based at NAS Corpus Christi, Texas. The Skyraider's nose and tail were painted International Orange (FS12197) on the Light Gull Gray over Insignia White finish. The fuselage sides aft of the engine exhausts were painted Flat Black to hide the exhaust stains.



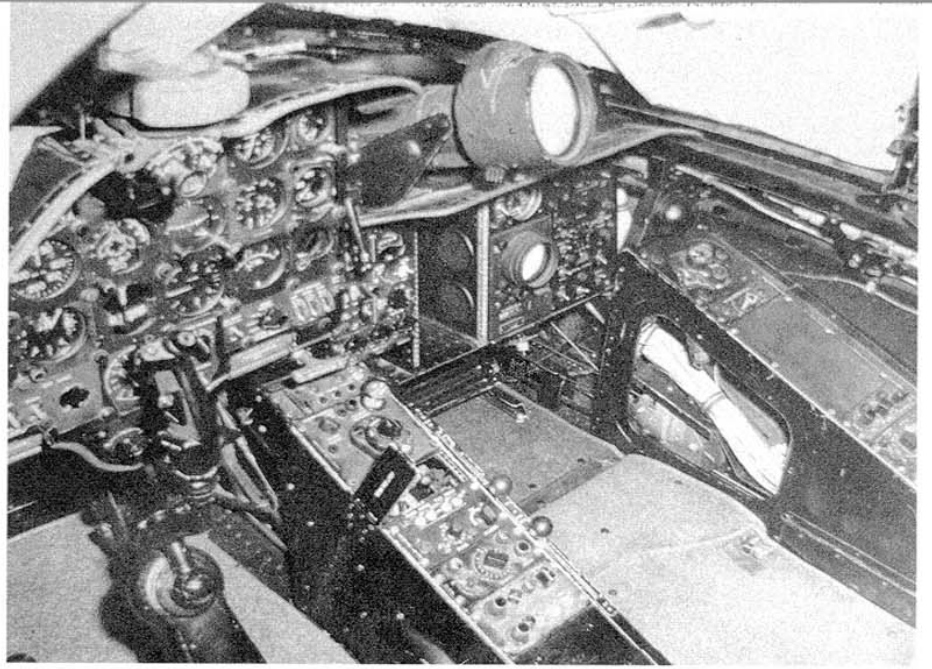
This AD-7, later designated A-1J (N-508, BuNo 142020) was the tenth production A-1J – the final Skyraider variant produced. This aircraft was assigned to VA-95, Carrier Air Group Nine (CVG-9) aboard the USS ORISKANY (CV-34) during 1958.





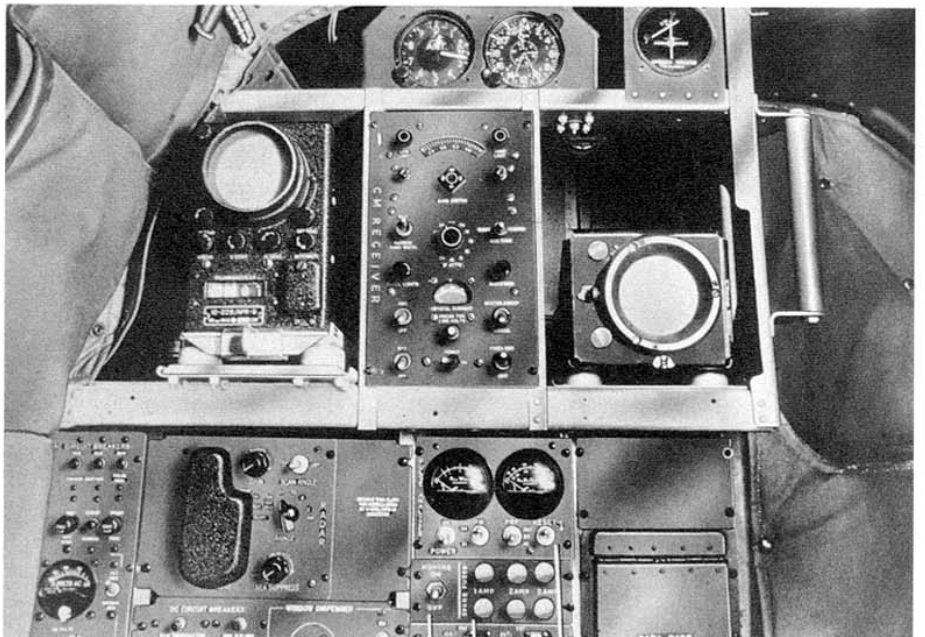
The APS-31 radar display was centrally located on the AD-4N radar operator's instrument panel. This radar allowed AD-4Ns to attack their targets with reasonable precision at night or in bad weather. Basic flight instruments were placed on the panel's port side, while controls for the radar were mounted to starboard. The circuit breaker panel was fitted to the upper starboard cabin wall. (Douglas)

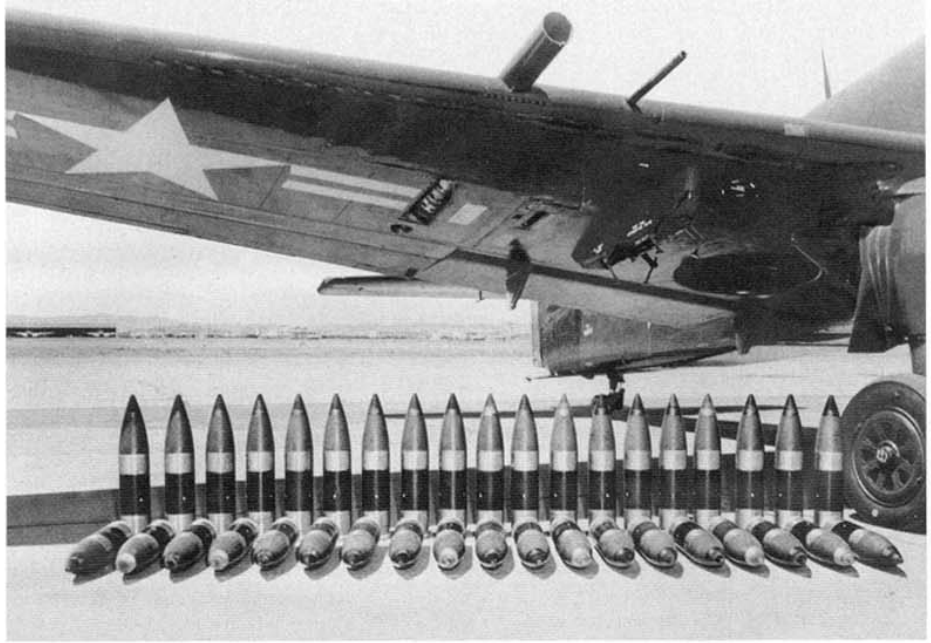
The ex-British Skyraider AEW.1s (AD-4Ws) delivered to Sweden had padded seats for the two radar operators, which became target tow operators in Swedish service. The air conditioner/heat exchanger duct ran vertically from the aft bulkhead; this duct ran along the compartment's ceiling. The Swedish added large bubble side windows to give the target operators improved visibility. (Barthelmes)



The Mk 20 gun sight's base was mounted on the port instrument shroud of the AD-5N's cockpit. The ECM operator sat to starboard and had an APS-31 radar display in the panel's upper center section. An APA-69 indicator was placed immediately below the APS-31 scope. The blank plate on the starboard console was the typical mounting place for the APQ-2 searchlight control grip. (Douglas)

The AD-4Q ECM operator's station was located in the aft compartment's port side. An APR-9 receiver scope was mounted on the upper port panel, with the APR-9 control unit in the center and the APS-19 search radar scope placed to starboard. The hand grip on the far right console assisted with maneuvering within the AD-4Q's cramped ECM station, located between the speed brake wells. (Douglas)



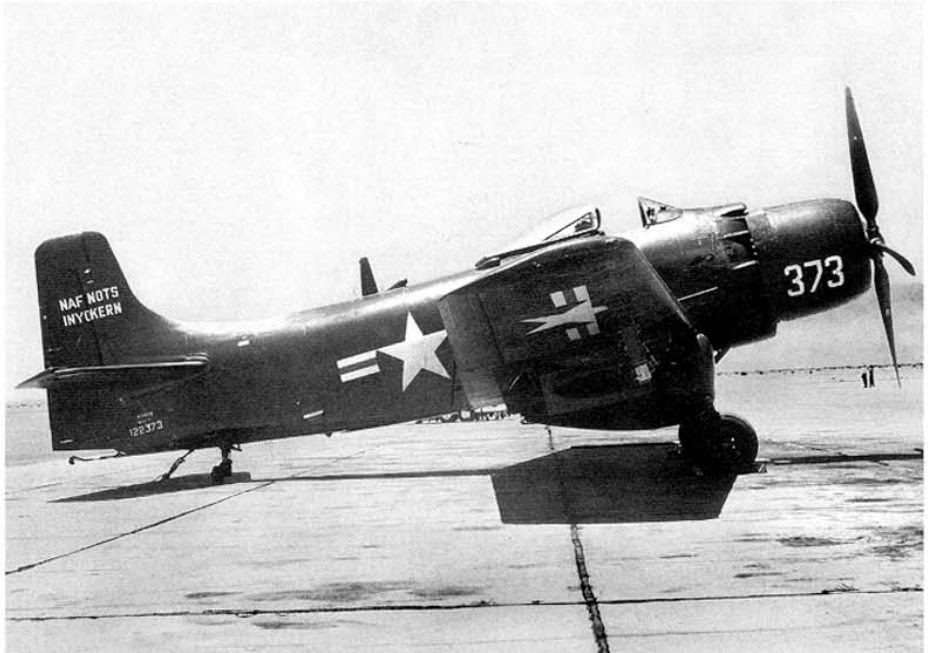


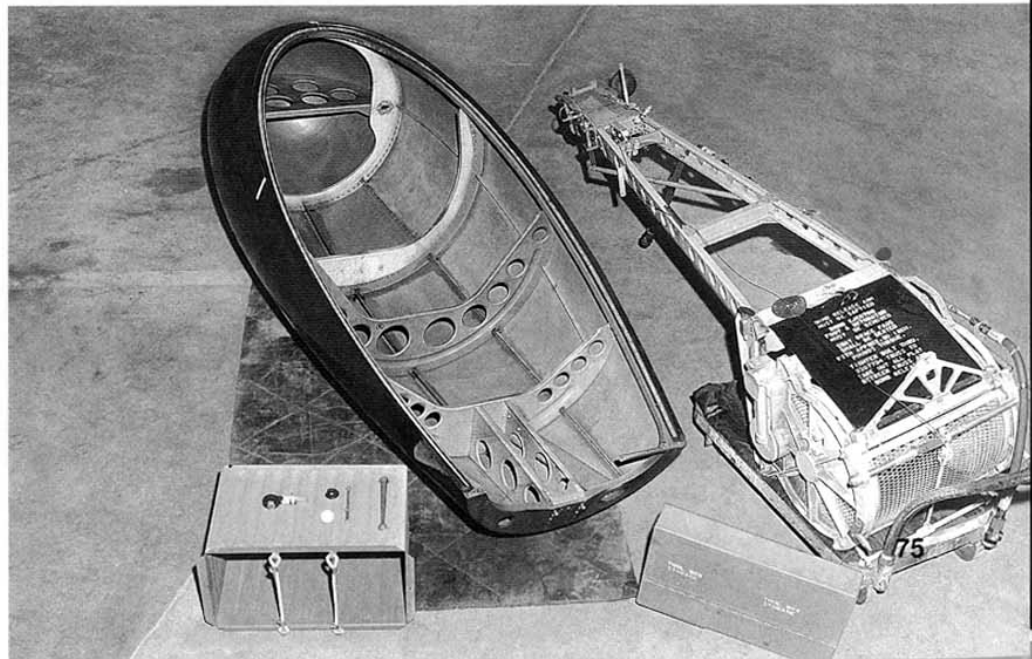
The tenth XBT2D-1 (BuNo 09094) was modified and tested at Naval Ordnance Test Station (NOTS) Inyokern, California between 1946 and 1948. These tests evaluated the feasibility of equipping the Skyraider with five inch (12.7 CM) spin-stabilized rockets fired from the outer wings. Armorers placed 38 projectiles and their propulsion cartridges under this Skyraider's starboard wing. (Douglas)

This AD-2QU (BuNo 122373) was fitted with the Mk 8 tow reel and fairing on the lower fuselage. The Mk 8 unit allowed the Skyraider to tow aerial targets for training fighter pilots and anti-aircraft gunners. The AD-2QU was assigned to NOTS Inyokern, now known as China Lake. The red bar was added to the US national insignia on 14 January 1947. (Douglas)

The modified XBT2D-1 (BuNo 09094) performs a static test firing of the five-inch spin-stabilized rocket system at NOTS Inyokern. Six rounds were carried in each wing and were launched individually. A large amount of rocket exhaust exited the apertures fitted underneath each wing. The five-inch spin-stabilized rocket system – although a good idea at that time – was not adopted for the Skyraider or any other aircraft. (Douglas)

Both single and multi-place Skyraiders could be fitted with the Mk 8 target tow reel. This device was carried inside the fairing at left and was mounted on the aircraft centerline. Crewmen in the Skyraider's aft compartment could operate the reel through a hatch in the fuselage bottom, starboard of the centerline. Ten Mk 22 targets were typically stowed in the aft compartment. (Douglas)



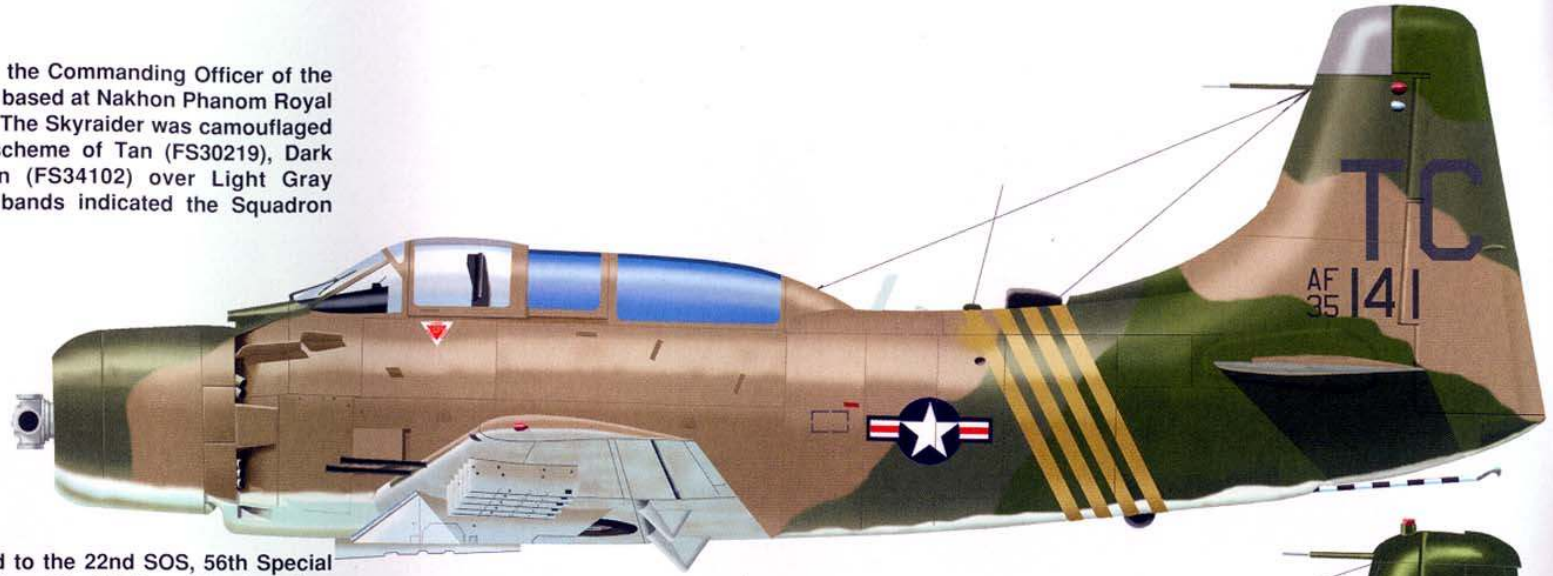


This Skyraider AEW.1 (AD-4W; A-J-417, WT965) was assigned to A Flight, No. 849 Squadron of the Royal Navy. The J on the vertical tail denoted this aircraft's assignment to the carrier HMS EAGLE during 1958. The British Skyraiders retained the US Navy's overall paint scheme of Glossy Sea Blue (FS15042). This AD-4W's Bureau Number (BuNo) was 124124 prior to its delivery to Britain.

This AD-6 (A-1H, BuNo 135224) was flown by Nguyen-Quang Tri, commander of the 1st Fighter Squadron, South Vietnamese Air Force (VNAF) at Bien Hoa Air Base (AB) in December of 1963. The Skyraider's aft fuselage band included designs for the Squadron's four flights. This aircraft was finished in the standard US Navy colors of Light Gull Gray (FS36440) upper surfaces with Insignia White (FS17875) control and undersurfaces.

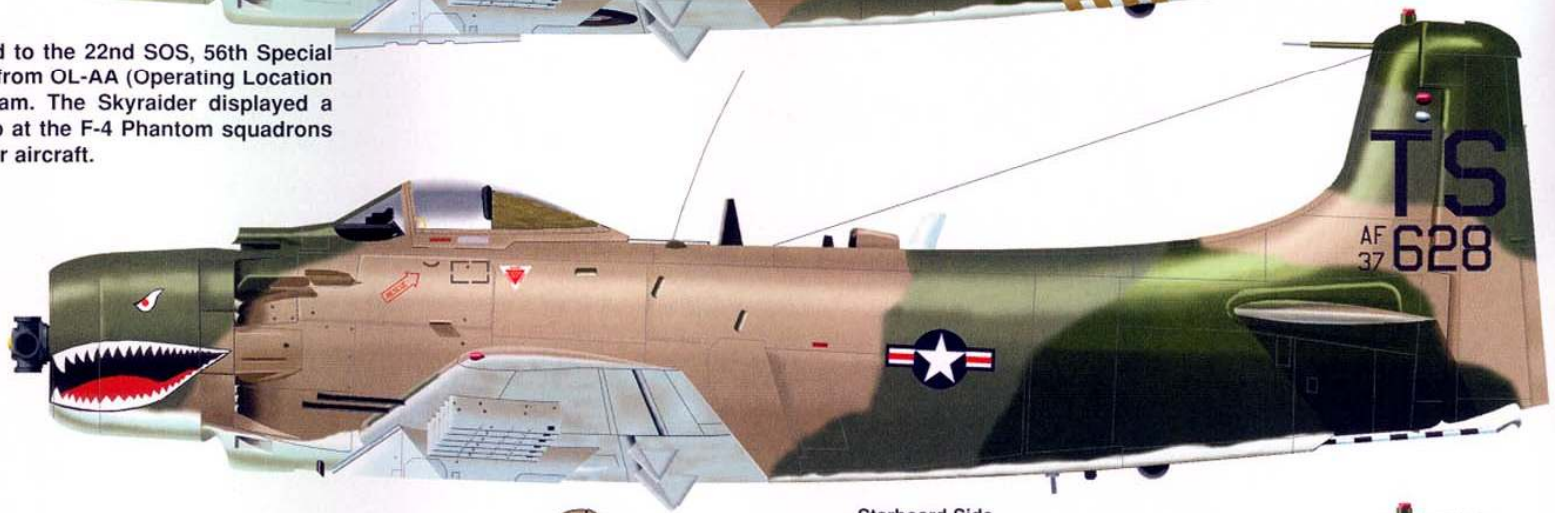
This A-1E (52-132425) was assigned to the US Air Force's 602nd Air Commando Squadron (ACS) during 1964. This aircraft was based at Pleiku AB, South Vietnam and was lost in action in April of 1966. USAF A-1s were originally finished in COIN (Counter-Insurgency) Gray (FS36473) and Insignia White (FS17875) with black anti-glare and fuselage side panels.

This A-1E (TC, 52-135141) was flown by the Commanding Officer of the 1st Special Operations Squadron (SOS), based at Nakhon Phanom Royal Thai Air Base (RTAB), Thailand in 1970. The Skyraider was camouflaged in the USAF's Southeast Asia (SEA) scheme of Tan (FS30219), Dark Green (FS34079), and Medium Green (FS34102) over Light Gray (FS36622). The four Tan aft fuselage bands indicated the Squadron Commander's aircraft.



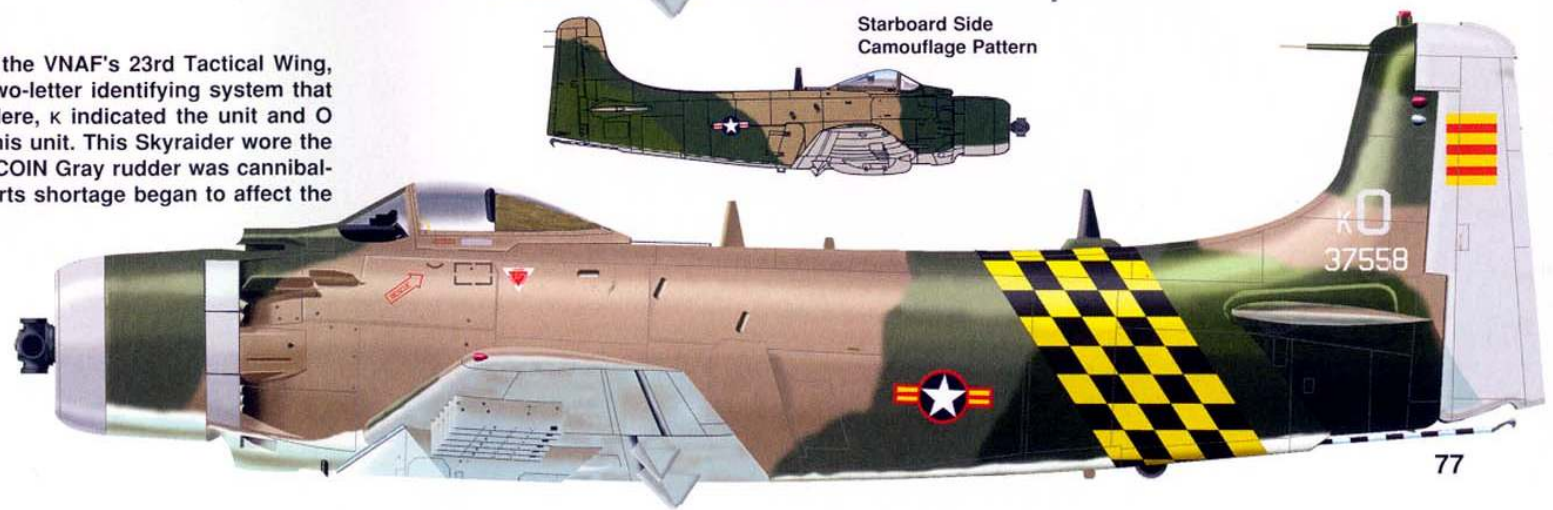
This A-1H (TS, 53-137628) was assigned to the 22nd SOS, 56th Special Operations Wing (SOW). The Wing flew from OL-AA (Operating Location Alpha-Alpha) at Da Nang, South Vietnam. The Skyraider displayed a shark mouth on its cowl – a friendly jab at the F-4 Phantom squadrons which had shark mouths painted on their aircraft.

Upper Surface Camouflage Pattern



Starboard Side Camouflage Pattern

This A-1H (KO, BuNo 137558) flew with the VNAF's 23rd Tactical Wing, based at Bien Hoa. The VNAF used a two-letter identifying system that was carried on the vertical stabilizer. Here, K indicated the unit and O identified the individual aircraft within this unit. This Skyraider wore the standard USAF SEA scheme, while the COIN Gray rudder was cannibalized from another aircraft as a spare parts shortage began to affect the Skyraider in the early 1970s.



Some AD-4N Skyraiders were delivered without the electronic gear and designated as AD-4NAs. These aircraft were typically assigned to utility service as reflected by the markings of this AD-4NA (UD-60, BuNo 126940), stored at NAS Litchfield Park, Arizona on 28 February 1958. This Skyraider was previously assigned to Utility Squadron Four (VU-4). The fuselage was painted Engine Gray (FS16081) with wings and tail – except for the rudder – in Orange Yellow (FS13538). The rudder and a stripe chordwise immediately inboard of each wing fold were painted Fluorescent Red Orange (FS28913). The lettering was white on the gray and red, and black on the yellow. The AD-4NA was easily upgraded to full electronics capability in the field. (R. Besecker)

The Skyraider was evaluated as a platform to spray the infamous chemical defoliant Agent Orange. This A-1 was fitted with three 285 gallon (1078.8 L) Agrinautics Model 2400 spray tanks. Power for the spray pump came from a 'feathermatic windmill' placed on the front of each tank. The agent was sprayed through a 53 inch (134.6 CM) spraybar mounted on the trailing edge of the tank's fin. Skyraiders never dispensed Agent Orange in operational service. (Agrinautics)

This UA-1E GD-815, BuNo 133907) assigned to VAW-33 is seen aboard USS ESSEX (CV-9) in July of 1964. The aircraft was painted overall Engine Gray (FS16081) with Orange Yellow wings (FS13538) and an International Orange (FS12197) tail. This Skyraider was fitted with a Mk 8 tow reel beneath the fuselage to train the ESSEX's fighter pilots in air-to-air gunnery. *Night Hawks* was painted on the engine cowling, with a chess knight's head and a hawk applied near the lettering. (R. Besecker)

The end of the line; the last Skyraider built was this AD-7/A-1J (NJ-227, BuNo 142081). This aircraft was assigned to VA-122, a Pacific Fleet Readiness Squadron at NAS Lemoore, California. Douglas produced 3180 Skyraiders when production ended on 18 February 1957. All outboard weapon pylons were removed and the MODEX 227 was over-painted on the engine cowling. International Orange was painted on the wingtips and tail of this Skyraider. NJ-227 was parked at NAS Quonset Point, Rhode Island in 1965. (R. Besecker)

ISBN 0-89747-429-6
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